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A Weekly Medical Journal.

VOLUME LI.

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ORIGINAL ARTICLES.

THE PROPER EMPLOYMENT OF PREPARED FOODS FOR INFANTS.

BY VICTOR C. VAUGHAN, M.D., PH.D.,
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THE feeding of infants which for any reason are denied the mother's breast, has been, and continues to be a question of great interest. Even the matter of the selection of a wet-nurse, where both money and opportunity are abundant, is one of the greatest importance, and, as all know, this method of securing nourishment for the child is not free from danger. First, there is often the dread that the nurse will convey to the child some constitutional disease. Then the nurse can hardly be expected to have that watchful solicitude for the child's health which is the peculiar characteristic of its own mother; and the most trusted servants have been found quieting the baby with opiates and even narcotizing it with alcohol. Again, the nurse who offers herself only on account of the demands of poverty, must often leave her own child to be fed artificially, and the question of the importance of infant feeding is only transferred in its application from the child of the mistress to that of the servant. Lastly, in a large number of cases, from want of a wet-nurse, obtainable at any price, or from want of money, the child must be fed artificially.

When the artificial feeding becomes necessary, of what shall the food consist? In this country, at least, we cannot obtain the milk of the ass or even that of the goat, in quantities sufficient to be used by many. I think that all will agree that cow's milk must continue to be the chief source of nourishment for children, and in a recent article in this journal[1] I endeavored to formulate certain rules for the better care of milk. As soon as the consumer demands it, the dealer in milk will conform to those or similar rules. The result of the application of the rules will not be to injure the trade of the dairyman; but the reverse will be true, inasmuch as his milk will be greatly improved in quality and will command a better price.

In the article referred to I urged that no milk should be given to the child sick with cholera infantum or other summer diarrhœas. This prohibition applies to all prepared foods containing milk or to which milk must be added. Recently I obtained all the infant foods I could find in the market, prepared them according to the directions accompanying them, placed them in four-ounce bottles, making a duplicate test for each food, added some of the ferment which I had found would produce tyrotoxicon in milk, and kept the tightly stoppered bottles at a temperature of 38° C. for six hours, then tested the contents of each bottle for the poison, and found it present in every one of them. It should be clearly understood here that the poisonous ferment was added to the foods.

This experiment fulfils the conditions which would exist were a child sick with cholera infantum to be fed with one of these foods; provided always, of course, that my theory as to the causation of this and kindred diseases in children is true. Some preparations of peptonoids and peptones treated in the same manner as the infant foods, failed to develop the poison, at least, in quantities sufficient to be recognized by any chemical test. I may add here, that a similar experiment was made with milk which had been boiled, and in this also the poison was developed. But in the boiled milk to which no ferment was added, as well as in the unboiled milk to which no ferment was added, the poison did not appear, at least within the six hours.

Now, from these experiments I conclude that foods prepared from milk or to which milk must be added, are not suitable for children who are suffering from the summer diarrhœas. Just why the poison should appear in the milk preparations and not in the peptonoids, I cannot say. There are several possible explanations. The growth of the germ may simply be more rapid in one than in the other, and the difference in the development may be only one of time; but a difference of this kind is sufficient for all practical purposes.

Then have the prepared milk foods no legitimate use? I think they have, and desire to point out what I consider to be their proper employment.

Even under the most favorable conditions milk can be kept unchanged only for a short time in summer. There is the same reason for the drying of milk and the preservation of its solids that there is for the curing of meat or the canning of fruit. The dried milk solids may be transported any distance and kept for any reasonable length of time, if properly prepared, without undergoing putrefactive changes. But they are to be used with children free from the summer diarrhœas rather than with those suffering from those complaints. Where the source of the milk supply is doubtful, a properly prepared milk food would be much more reliable than the raw milk. Besides, with any dilution or addition that may be made, cow's milk cannot be rendered identical with the milk of woman.

Can the milk of the cow be rendered more nearly identical with that of woman than it is by the simple dilution with water and the addition of milk sugar? All chemists, I think, agree that woman's milk contains more peptone than does the milk of the cow.

[1] THE MEDICAL NEWS, June 18, 1887.

Kirchner, who has given much attention to this subject, and has experimented largely, believes that the difference in the digestibility of milk from the cow and that from woman, is wholly due to the larger amount of peptone in the latter.[1] I cannot see, therefore, why the casein of the cow's milk should not be partially digested. That it should not be completely digested, I think there can be no question. It is certainly unscientific to feed any one for any length of time upon peptones altogether; especially is this true of children. To relieve the gastric juice altogether is to diminish its secretion. The muscle of the arm, the brain, and, indeed, every part of the body, is weakened by inactivity. The stomach can be no exception to this rule. It must have something to do, or it will soon be unable to do anything. There may be, and doubtlessly are, exceptional cases, in which the temporary administration of peptones exclusively is desirable. But these are exceptional cases, and the administration of the completely digested food should be only temporary. Certainly these cases do not include healthy children. For these reasons I generally prefer the partially digested meat preparations to the peptones.

If this be true, will it not be sufficient for the nurse to digest partially the cow's milk as it is fed to the child? There are these objections to giving advice of this kind. 1. If the source of the milk is doubtful, or if it has become contaminated by unclean vessels, or if putrefactive changes have already begun in it, the process of artificial digestion will not destroy the poisonous ferment. Indeed, the temperature at which the milk is kept during the artificial digestion will only favor the development of the poison. We have Dr. Holt's evidence that the use of peptonized milk is not to be recommended in summer diarrhœas.[2] 2. The artificial digestion, as carried out by the nurse, is not likely to be scientifically done. It will probably be neglected or amount to only a form, or it may be overdone and the taste of the milk spoiled, and too great a proportion of the casein converted into peptone. If partial artificial digestion is to be practised at all, and I see no reason why it should not be, it should be done under competent direction and when the milk is perfectly fresh.

Let us see what some of the most important properties of this prepared milk food should be. It should not contain any vegetable matter which is difficult of digestion.

This prepared milk food should be sufficiently nutritious in itself, and, consequently, should not require the addition of milk. In the use of all those prepared foods to which the addition of milk is necessary, the same danger of introducing the poisonous ferment into the alimentary canal exists as in the use of the raw milk. Many of the prepared foods contain such small amounts of proteids that the addition of milk becomes necessary. They should contain a larger per cent. of milk solids, obtained by the evaporation of milk in vacuo.

Attention should be given to the amount of inorganic salts, especially of lime and phosphoric acid, in a prepared food. A proper amount of these substances is as necessary to the health and growth of the child as are fats, proteids, and carbohydrates.

The carbohydrates present in such a food should not be in the form of grape sugar, but as milk sugar and dextrine. The grape-sugar is not supposed to have any specially injurious or poisonous properties; but it ferments too rapidly and for this reason is objectionable. By roasting wheat flour its starch is converted into dextrine, and this roasted flour mixed with milk solids, obtained by the evaporation of milk in vacuo, forms a food sufficiently nutritious, and one which may be kept indefinitely without putrefactive changes occurring in it.

Prof. J. Lewis Smith, in his excellent work on *Diseases of Infancy and Childhood*, speaks well of the roasted flour; and this, added to milk solids, makes the best infant food known to the writer.

[1] Beitrage Zur Kentniss der Kuhmilch und ihre Bestandtheile, S. 42 et seq.

[2] New York Medical Journal, January 29, 1887.

BERGEON'S METHOD OF TREATING PHTHISIS.[1]

BY EDWARD T. BRUEN, M.D.,
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In the early part of February, 1887, I determined to try the plan of treatment of pulmonary consumption by injections of hydrogen sulphide in small quantities, propelled by currents of recently prepared carbon dioxide. This method of treatment was inaugurated by Dr. L. Bergeon, of Lyons, some four years ago, and it should be carefully borne in mind that the principle upon which Bergeon has based his treatment is that the disastrous results of pulmonary tuberculosis are hastened by the septicæmia set up by absorption of the products of suppuration from lesions in the bronchial passages, and in pulmonary and bronchiectatic cavities. Bergeon has suggested that repeated and prolonged bathings of the suppurating surfaces with a safe antiseptic agent controls the suppuration and gives the lesions an opportunity to undergo cicatrization, while in consequence numerous unpleasant and even dangerous symptoms are modified or controlled. Bergeon has not claimed that the number of bacilli of tuberculosis has been reduced in any considerable proportion of cases.

It may be assumed that there are three indications for the treatment of phthisis of prime importance.

The first is to secure some agent which will act upon the cause or causes of the disease. Since the essential etiology of phthisis is obscure, we resort to those measures which tend to overcome the well-understood predisposing causes, and increase the general health—climate, diet, and hygiene—alteratives and tonics have a well-recognized place in modifying these predisposing causes. Should the bacillus of tuberculosis be the real cause, we lack thus far a specific therapeutic remedy, and from my

[1] Read at the meeting of the Association of American Physicians, Washington, June 3, 1887.

records it does not appear that Bergeon's method will help us much with this indication for treatment.

Recognizing that pulmonary consumption is attended by general wasting of the tissues, the second indication is to prevent, by superfeeding, their further destruction; and, in general, it is true that in proportion as the vitality of the organism is increased, the number of bacterial organisms present in the sputa diminishes, especially the tubercle bacillus, because the healthy tissues are unfavorable culture media. I think the record of subjoined cases will show that sometimes Bergeon's treatment, by controlling or modifying certain prominent symptoms of phthisis, will enable us better to fulfil this part of the therapeutic management of phthisis.

The third indication is the medicinal management of special symptoms as they arise.

Bergeon's treatment would seem to be an important therapeutic measure. Whether it will prove sufficiently potential to win a permanent place in professional opinion, more time is required to determine. When I began to use the treatment it appeared to me probable that we should secure a modification or arrest of the suppurative process. If this was successfully achieved reduction in temperature, modification or suspension of night sweats, diminished cough, and expectoration would follow, and one might even hope in some cases to abolish bronchial catarrh. With the removal of these symptoms we might anticipate an increase of appetite, and, through the modification of the phthisical process, an increase of flesh.

In a preliminary report published in THE MEDICAL NEWS of April 2, 1887, the results of about two months' use of the method upon twenty-five cases seemed to justify the above anticipations. Most of the patients suffered from advanced lesions of pulmonary phthisis, nearly all were associated with cavities, marked bronchial catarrh, and several presented decided laryngeal disease. I reported one case of catarrhal or broncho-pneumonia, with implication of one lung in which entire convalescence ensued after treatment for eight weeks by Bergeon's method. In another instance the lesions were phthisis with pneumothorax, and the same marked benefit accrued after treatment.

Since April I have been able to follow continuously fourteen of the first cases. Out of the twenty-five cases two have died, in one I obtained a post-mortem which I will subsequently detail. Twelve cases remain in the same condition in which they were when I wrote my paper in April—that is to say, the physical signs remain unchanged; the temperature still above normal, the flesh and strength not increased after the first gain of, say, an average of five pounds. Yet the patients undeniably feel better: the process of suppuration with its attendant evils has been modified, suppressed, or controlled, and it must be admitted that the patients have been benefited by the treatment. Since April 2d I have applied the Bergeon method to twenty-four cases in private practice, and to thirteen additional hospital cases, so that in all I can present sixty-two cases in which the treatment has been applied in a systematic manner.

CASE I.—Mrs. T., æt. forty-five. Tubercular consolidation of the right apex. Duration of illness two years up to the date of the gas treatment, which was begun April 15, 1887. Temperature 99° A.M., 101° P.M., and so continued until April 24th, since which time it has continued at 99°. Pulse has averaged 100 throughout. Expectoration moderate in amount—about two ounces daily. Examination of sputa April 15th: rather numerous tubercle bacilli, and extremely numerous other rods and micrococci. April 23d: very numerous tubercle bacilli, extremely free from other bacteria. May 20th: same result. General condition of the patient much the same. Some increase in flesh. Sputa less in amount.

REMARKS.—Patient says she feels much better and the treatment seems to have been beneficial.

CASE II.—Brereton, æt. sixty-three. Implication of both lungs in patches. Tubercular disease with fibroid thickening; dry pleurisy on both sides of chest. Marked dry friction râles audible over axillary regions. In this case the beneficial results of treatment have been conspicuous. The patient has gained twelve pounds in flesh, appetite excellent. Temperature and pulse both average one hundred after seven weeks treatment. April 4th, moderate numbers of tubercle bacilli. No other bacteria.

April 23. Rather numerous tubercle bacilli in sputa, no other bacteria seen.

May 9. Moderate numbers of tubercle bacilli; large numbers of other bacteria.

REMARKS.—This case certainly improved decidedly. Patient had previously been confined to bed four months—at date he is ready to resume work—and the disease is latent. The result of treatment compares favorably with the most satisfactory cases of climatic treatment.

CASE III.—Sarah B., æt. twenty-eight. Ill five years. Expectorates about a teacup of matter daily. Mother died of phthisis. Diffused consolidation of left lung; apex cavity. Very numerous tubercle bacilli; no other bacteria seen.

April 14. Temp. 102°; pulse 100, P.M.

20th. Temp. 98.5°; pulse 96, P.M. Temp. 99°, A.M. Thereafter temperature did not rise above 99°, pulse 84, until May 20th.

May 20. Treatment discontinued.

REMARKS.—In this case the treatment has been beneficial—although there has been no change in physical signs, or character of the sputa.

CASE IV.—Geo. W., æt. twenty-eight. Cough two years standing. Incipient phthisis of right apex. Cough ringing and very annoying. Expectoration scanty. Weight one hundred and thirty-five at best, at present weighs one hundred and thirty. Microscopic examination of sputa.

April 15. Moderate numbers of tubercle bacilli with somewhat large numbers of other bacteria, some round epithelial scales not containing bacteria.

25th. Some tubercle bacilli, other bacteria not seen.

30th. Very numerous tubercle bacilli.

May 20. Rather numerous tubercle bacilli, no other bacteria.

In this case at date there are evidences of fresh cold—*i. e.*, bronchial catarrh over middle right pulmonary lobe. Physical signs at apex unchanged. General health better—but this improvement is doubtless attributable to careful dietetic management. Patient advised to go to San Antonio,

Texas, and continue gas treatment and examinations of sputa.

Case V.—Maitland, æt. twenty-six. Impaired resonance over right upper lobe. Prolonged harsh expiration, moist râles. Impaired mobility of right apex. Has been losing flesh and strength with cough for three months. Gas began March 26th in Philadelphia Hospital. Temp. at that date 101° F. April 1st the temp. was normal. Respiration 24, pulse 90. Thereafter until the date of discharge from the ward the temperature with one or two exceptions has continued at the normal point. Weight increased five pounds during treatment.

April 25. A few tubercle bacilli, very numerous other bacteria, and the same appearances persisted when he was discharged from the hospital, May 10th.

Remarks.—In this case, although the process is latent, yet undoubtedly great benefit accrued from the treatment.

Case VI.—Carl G., æt. thirty, German. Admitted to hospital March 25th. Physical signs the same as in Maitland. Temp. 100°. Weight one hundred and twenty-nine and a half pounds. Under treatment from March 25th until May 2d. With exception of April 4th, 5th, 6th, and 7th, on which days temperature rose to 102°, the temperature was normal, pulse 70–80, resp. 26–30. Weight increased from one hundred and twenty-nine and a half to one hundred and forty-four and a half pounds on May 2d, the day he was discharged.

No tubercle bacilli could be detected, although repeated examinations of the sputa were made.

Remarks.—In this case great benefit followed the treatment—yet the day patient was discharged temperature registered 100°, and it was evident that in this case also latent disease still existed.

Case VII.—Gallagher, æt. twenty-six. Philadelphia Hospital case. Tubercular inheritance. Cavity at right apex and implication of entire right lung. Case observed from February 6th until May 26th. Temperature ranged from 97° to 102° from February to March 2d. Gas commenced March 3d. Temp. on March 3d, ranged 98° to 100°, and continued the same for one week. The previously noted wide diurnal variations of temperature again commenced and have continued to date. Sputa examined and found to contain tubercle bacilli on each examination.

Remarks.—This patient gained six pounds while under the gas treatment. He also expresses himself as feeling well. Sputa small in amount, yet still contains bacilli, and the temperature record still continues unchanged. Fair result considering the lesions.

Case VIII.—James C., æt. twenty-three, admitted to hospital April 11, 1887. Ill two weeks previous. Physical sign of consolidation of the right upper lobe; apparently a case of acute catarrhal pneumonia. Treatment of general character from April 11th to May 12th, at which time the signs of consolidation persisting, the sputa was examined and found to contain numerous tubercle bacilli; no other bacteria. On second examination, May 28th, same result. But on the 12th of May the gas treatment was inaugurated, and within one week the temperature, which had previously ranged from 100° to 104°, became normal; pulse likewise, the sputa lessened. On May 31st patient has a normal temperature and pulse, does not expectorate, and indications for recovery seem favorable.

Case IX.—Sullivan, æt. forty-seven, entered Philadelphia Hospital February 2d. Ill two years. Consolidation of right apex; general bronchial catarrh with tendency to general pulmonary emphysema. Case noted from February 6th to May 22d.

April 8. Negative examination; no tubercle bacilli.

25th. Sputa contained few tubercle bacilli; no bacteria. May 6th very numerous tubercle bacilli; no other bacteria seen. Temperature record exhibited diurnal variation of temperature from 100° to 101°, from February 12th to 26th. No record kept from February 26th to March 9th, at which time the recorded temperature was 101°. Weight, one hundred and twenty-five pounds. Gas commenced. Temp. 97° to 98.2°, until March 21st, at which time weight was one hundred and thirty-two pounds. From March 26th until April 14th, temp. again 101° to 102°. From April 14th to May 2d, temp. 98° to 99.5°. No increase in weight. Pulse averaged 90 throughout; respiration 22.

Remarks.—In this patient the improvement has been very decided, the outbreaks of high temperature being due to exacerbations of bronchial catarrh. Treatment still continued.

Case X.—Eagen, æt. thirty-six. Ill two years. Large cavity at right apex; extensive consolidation in balance of lung. Confined to bed. Copious night-sweats. Copious expectoration. Very weak. Weight, one hundred and eleven pounds. Anorexia, coated tongue. Temp. 101°. Gas treatment March 2, 1887. From that time until April 24th, temperature rose above 99° on only two or three occasions. Weight, April 11th, one hundred and fifteen pounds. No night-sweats occurred after one week of gas treatment. Tongue clean, appetite good, and able to walk about. Sputa on April 8th and 19th, contained extremely few tubercle bacilli, many diplococci, a few rods.

Remarks.—In this case the improvement in general condition was marked, and, considering the extent of the pulmonary lesions, very satisfactory.

Case XI.—Gus G., æt. forty-seven. Fibroid phthisis. Copious expectoration. Had been in hospital six months previous to gas treatment. Daily hectic. Temperature constantly above 100° F. His case has been reported because from the time gas treatment was inaugurated, March 2d, until April 24th, temperature ranged between 96° and 98°, and pulse averaged 76. Expectoration markedly lessened. General strength much increased. Total gain in weight in time mentioned, five and a half pounds. Sputa contained in three examinations, numerous tubercle bacilli; no other bacteria.

Remarks.—In this case an improvement has been very positive, considering the gravity of the lesions.

Case XII.—Mrs. W., æt. thirty-five. Consolidation of left upper lobe. Small localized cavity in the left apex anteriorly. A few mucous râles audible. Balance of both lungs normal. Expectoration about a teacup full daily. Weight, one hundred and forty pounds.

April 1. Temperature 101 P.M., 99° A.M. Microscopic examination of sputa: moderate numbers of tubercle bacilli and long chains of streptococci with zooglœa of micrococci. During treatment the temperature in the morning was steadily lowered during the first week ending April 7th, averaging from 99° to 100°. During the period from April 8th to 24th, normal temperature was recorded. From April 24th to 30th it rose, the record showing a fluctuation from 99° to 101°. Pulse throughout averaged 100. No night-sweats during the treatment. Cough always troublesome, especially at night. No gain or loss of weight. No gain in ability to control nervous symptoms.

April 23. A few tubercle bacilli in the sputa.
May 1. Abundant tubercle bacilli.

REMARKS.—Treatment, although for a time seeming to control the temperature and reduce the sputa in amount, has terminated practically in a negative manner.

CASE XIII.—Mrs. K., æt. forty-five, married. Tubercular family history. Diffused consolidation of right lung. Ill two years. Weight, one hundred pounds. Annoying cough and profuse expectoration. Temperature April 1st, 99° to 102°. Gas treatment commenced. Temp. 98° A. M., 102° P. M., until May 2d. From May 2d to 10th it was 98° to 101°. From May 11th to 16th it was 98° to 99°. From May 16th to 24th it was 98° to 102°. Pulse has averaged 100. Expectoration throughout markedly lessened. Appetite improved Morale improved. Examination of sputa April 1st, very numerous tubercle bacilli; no other bacteria seen. April 25th, numerous tubercle bacilli and other bacteria; very numerous diplococci and diplo-bacteria; long streptococci; long filaments, and long rods. May 8th, very numerous tubercle bacilli and a few other bacteria.

REMARKS.—Entirely negative results in this case according to records of temperature and sputa, although patient feels better.

CASE XIV.—Mrs. F., æt. twenty-eight. Diffused consolidation of right lung, with cavities in upper lobe; abundant expectoration; night-sweats; temperature uninfluenced by treatment, registering constantly 101° A. M., 103° P. M. Pulse uninfluenced, ranging from 120 to 140. Treatment commenced March 24th, and continued until death of the patient, May 4th. Microscopical examination: sputa, numerous tubercle bacilli, large numbers of streptococci, a few tetragenous micrococci, a few large epithelial scales filled with bacteria. These appearances were practically unchanged throughout.

CASE XV.—Mr. H. Implication of upper lobes of both lungs. Lower lobes of both lungs normal. Abundant mucous râles at right apex, anteriorly and posteriorly; the same over left upper lobes, but not so numerous. Temperature 99°; several ounces of mucopurulent matter expectorated daily. Treatment inaugurated March 31, 1887. Examination of sputa revealed, April 8th, few tubercle bacilli. April 22d, rather numerous tubercle bacilli; no other bacteria seen.
May 14. Same appearances.

REMARKS.—In this case there was a notable gain in flesh, some seven pounds in all; general condition improved, viz., spirits and appetite. The treatment is still being continued, the patient claiming to feel improved. I believe that, in the absence of decided improvement in the physical signs, the result of treatment is doubtful.

CASE XVI.—Mr. R. Family history tubercular. Duration of disease, three years. Tubercular disease of both lungs, with fibroid thickening, especially of upper lobes; a great deal of vesicular emphysema; numerous fine, crackling râles over both lungs. Treatment commenced April 20th. Few tubercle bacilli; no other bacteria.
May 8. Moderate number of tubercle bacilli. Numerous other bacteria.

REMARKS.—Patient felt improved while taking treatment. Appetite better; cough and expectoration less; but there was no tangible evidence that treatment had been beneficial, when patient returned to his home to continue the treatment himself.

CASE XVII.—Mr. S., æt. twenty-four. Ill three years. Most of that time spent at Red Bluffs, Cal., and in Colorado. Family predisposition to phthisis. Dulness on percussion from clavicle to fourth rib, with impaired mobility; feeble bronchial breathing; abundant mucous râles and expectoration.
April 20. Sputa; very numerous bacilli; no other bacteria seen.
May 10. Sputa; same. Treatment discontinued at this date on account of negative effect.

CASE XVIII.—Mr. S., æt. twenty-eight, native of Boston. No predisposition to phthisis. Ill one year, which had been spent at Los Angelos, Cal., and vicinity. Physical examination of lungs revealed cavity in left apex and extensive disease of left lung, with implication of right apex; abundant muco-purulent sputa, containing numerous tubercle bacilli. Temperature 104°, pulse 130. This patient had from time to time been subject to diarrhœa, and the use of gas within three days brought on diarrhœa, which compelled relinquishment of the plan of treatment, although several trials were made.

CASE XIX.—Mr. P., æt. thirty, English. Ill one year. Implication of both lungs by tubercular thickening; marked tubercular laryngitis, with aphonia; profuse muco-purulent expectoration.
May 8. Enormous numbers of tubercle bacilli; no other bacteria seen, but contrast staining poor.
20th. Same appearances practically.
26th. No appreciable improvement. Treatment continued.

CASE XX.—Mr. M., æt. sixty-three. Emphysema and bronchitis; profuse expectoration. In this case, after a two weeks' course of treatment, marked relief of the bronchial catarrh.

CASE XXI.—Mr. K., æt. fifty-two. Ill six years; five years spent in travel in Europe, Colorado, and the South. Cavity in left apex, with consolidation of upper lobes of both lungs; abundant mucous râles.
April 26. Treatment commenced.
May 8. Rather numerous tubercle bacilli in slide; other bacteria in enormous numbers.
26th. Tubercle bacilli not numerous; no other bacteria.

REMARKS.—At date the physical signs remain as at commencement of the treatment, and although the patient is somewhat stronger, the results of treatment are as yet negative. Treatment is being continued.

CASE XXII.—Mr. W., of Shamokin, æt. forty-five. Ill one year. Implication of both apices; marked bronchial catarrh; loss of flesh; anorexia. Under treatment from August, 1886. Last winter spent in Thomasville. Temperature throughout illness has been about 100° F. Gas treatment commenced May 5.
May 9. A few tubercle bacilli; immense numbers of other bacteria, including numerous streptococci.
15th. Same result.
20th. Examination, extremely few tubercle bacilli; a few other bacteria.

REMARKS.—In this case the treatment so far has been entirely negative.

To recite additional cases would probably involve wearisome repetition. Among my private cases the following statement must suffice:

CASE XXIII.—Miss Katie J., æt. twenty-two. Bronchial catarrh, with incipient phthisis. In two weeks bronchial catarrh markedly benefited, but hers was one of the few cases in which the use of the gas seemed to have a depressing effect upon the general system, and

I have deemed it more prudent to withdraw this form of therapeusis. In only three cases have I noticed any such result.

CASE XXIV.—Mr. M. One year's illness. Implication of left lung throughout. Two weeks' treatment. Feels much better. Physical signs unchanged. Still under treatment.

CASE XXV.—Mr. B., Avondale. Tubercular disease of both apices. Negative result.

CASE XXVI.—Mrs. R. Tubercular disease of upper lobes of both lungs. Two weeks' treatment. Negative result. Treatment now in progress.

CASE XXVII.—Jensen, æt. twenty-five. Illness nine months. Implication of right upper lobes, with small cavity at right apex; fine moist rales throughout right lung. Negative results in two weeks' treatment, but the same measures have been continued.

The sputa has been carefully examined in all cases without in a single instance detecting any variation in the number of the bacilli. In order to have this portion of the clinical study as impartial as possible, Dr. E. O. Shakespeare has conducted the examination of the sputa without a knowledge of the clinical studies, using the Koch-Ehrlich rapid method, modified by Rindfleish. Dr. Shakespeare has stated his belief that the bacilli did not respond quite so decidedly to the stain, nor color so brilliantly as when stained for the first time before the gas was used. But we do not lay great stress upon this point.

In addition to the histories already reported in detail, a close study has been made of twenty-five additional cases of phthisis. The subjects represented instances of moderately advanced lesions with one or more pulmonary cavities. The cases have improved in flesh by a gain of several pounds, have had lessened cough and expectoration, increased appetite and spirits, but yet present practically unchanged physical signs, and still have a temperature of over 100° F.

The following additional cases, still in the Philadelphia Hospital, and representing the same lesions, have also received the gas, but with negative results:

CASE XXVIII.—N. F., April 5, 1887, began treatment, and it is still in progress.

CASE XXIX.—W. K., March 13, 1887, began treatment, discontinued May 22, 1887.

CASE XXX.—E., April 1, 1887, began treatment. Treatment now in progress.

CASE XXXI.—F., April 3, 1887, began treatment. Treatment now in progress.

CASE XXXII.—B., February 10, 1887, began treatment. Treatment discontinued May 18, 1887.

The following cases, of the same character as the foregoing, have been discharged from the Philadelphia hospital, so much relieved as to be able to return to their work—yet in whom the disease is certainly only latent.

CASE XXXIII.—J. W., February 10, 1887. Discharged April 10, 1887.

CASE XXXIV.—W. H., February 10, 1887. Discharged May 6, 1887.

CASE XXXV.—McN., gas, February 6, 1887. Discharged April 10, 1887.

CASE XXXVI.—McC., February 15, 1887. Discharged April 10, 1887.

The first date represents the inauguration of the gas treatment—and it was continued until the discharge of the patients.

CASE XXXVII.—The case of Jennie B., phthisis with pneumothorax, treated with the gas from February 28th to April 8th, with marked benefit, was reported in a previous article (THE MEDICAL NEWS of April 2d).

CASE XXXVIII.—As was also the case of Lizzie F. —under the title of broncho-pneumonia. In this case the treatment was continued from February 1st to April 7th, when the patient was discharged, apparently in good health and without any physical signs of pulmonary disease.

Two cases died while the treatment was being conducted—both cases of advanced phthisis. I report extracts from the post-mortem examination of one of them:

CASE XXXIX.—J. McM., æt. thirty-seven, admitted to hospital June 7, 1886. Died April 12, 1887. Marked pleural adhesions over apex of left lung—a large cavity was discovered in the upper lobe of this lung—cavity contained a thin grumous material. The inner surface of the walls of the cavity were moderately smooth and firm. The cavity was in communication with the bronchus. The lower lobe was covered by a moderately healthy pleura, and was studded by a few points of bronchopneumonia and an enormous number of firm translucent miliary tubercles. Along the upper and anterior edges of the upper lobe there were a series of small anfractuous cavities containing a little fetid purulent matter, but possessing rather smooth walls. The parenchyma of this lobe otherwise normal. The right visceral pleura of the upper lobe was adherent to the costal pleura. The upper lobe contained two anfractuous cavities about the size of a walnut, nearly empty and having rather smooth walls, and containing a large amount of purulent contents. The parenchyma of the other lobes of the right lung were abundantly studded with aggregations of miliary tubercle, which were separated by more or less healthy pulmonary tissue.

This case was treated with the gas from February 6th to date of death. His symptoms were ameliorated by the use of the gas, but no evidence of tendency to healing of the pulmonary lesions could be recognized—obstinate diarrhœa preceded death—the small intestine was found to be markedly hyperæmic throughout, with prominence of the papillæ. No enlargement of Peyer's patches. No pronounced ulceration throughout the whole extent of colon or rectum. In the large intestine the hyperæmia was less marked, but there were numerous, very minute, scarcely perceptible, round follicular ulcers.

To sum up the results of the examination of these cases, the record will be, benefited, forty-two cases, of these, Lizzie F., M., and G. seemed to be in good health—though dulness and feeble breathing can be still detected over the portion of the lung which had been implicated—of the three, Maitland was the only case in which tubercle bacilli were recognized in the sputa, and the pulmonary disease is probably latent. Among the fifteen cases reported in which the results were negative, were three cases in which the treatment seemed to have a decidedly good effect, but their condition has fluctuated so much that I have, for fairness' sake, placed them in the negative list.

The favorable effects secured by the treatment were lessened cough and expectoration, and disappearance of the physical signs of bronchial catarrh. Together with these results came lowered temperature and suspension of night sweats. Temporarily reduction of the pulse-rate fifteen to twenty beats,

and temperature lowered from half a degree to one degree during administration of the gas.

In most of the cases I used the artificially prepared sulphur water, viz.: five grains of sulphide and five grains chloride of sodium to a pint and a half of water, and this seems to have been the most satisfactory solution. After employing the treatment for several weeks, in some cases I have increased the proportions of the two salts gradually, adding seven and a half, ten, fifteen, and twenty grains by weekly additions; but in cases in which I have failed to secure good effects from the weaker solutions, I have derived no benefit from increasing the strength of the solution. Recently I have used the Sharon Spring sulphur water, and added the sulphide and chloride of sodium each day. By keeping the bottle tightly corked, I have been able to use the same bottle of water on two consecutive days.

There are a few details of consequence in administering the gas. Until tolerance is established, a small amount, one pint to a quart of gas, has been used daily, then the same amount twice daily, and gradually increased. From a gallon to a gallon and a half can be ultimately injected without discomfort. If there is pain after using the gas, it should be used but once daily, and only a small amount at a time; the strength of the solution of sulphuretted hydrogen should also be reduced; for instance, two and a half grains of sulphide and chloride of sodium may be used. It is desirable to inject slowly, consuming an hour in giving a gallon of gas, and the patient should rest quietly an additional half hour until the gas is entirely absorbed from the bowel. The longer time taken to administer the gas the better, especially when any pain is caused by the treatment. The admission of atmospheric air into the bowel should be sedulously avoided.

In cases of intestinal lesion or diarrhœa, my experience has been unfavorable to the use of the gas, except in very small quantities. Chronic peritonitis also forms a contraindication to its use. In about two cases out of ten I have noted a faint reaction indicating sulphuret of lead, which was obtained by holding filter paper, saturated with acetate of lead, to the mouth of the patient during the administration of the gas. The reaction was in no case decided, and I cannot account for its absence in so many instances.

In none of the cases have any injurious effects been observed, but I have noted in some individuals subnormal temperature during the use of the gas, and also when the stronger solutions of sulphide of sodium were used the appetite and strength of the patients seemed impaired and their spirits depressed.

Two suggestions may be given for the failure of the treatment to accomplish better results. The first of these applies only to hospital cases. It is impossible in a large general hospital to secure the detailed attention to diet necessary to suit the capricious appetite of the consumptive. In treating consumption it is absolutely necessary to increase the vitality of the tissues, so that they will be unfavorable culture media for the bacilli.

The second suggestion is, that in cases with inherited tendencies to phthisis, or in those who acquire a phthisical tendency, there is great vulnerability of the mucous membranes, which ever fosters an outbreak of catarrhal processes in the bronchial structures. In this way the good effects of the treatment are constantly opposed. I incline to think that suitable climatic environment is an all important adjunct to the proper settlement of the value of Bergeon's treatment. But it is certainly an important addition to our therapeutic equipment to have an agent capable of influencing very markedly bronchial catarrh in so many cases, especially the stay-at-homes.

In a word, Bergeon's method, so far as I have used it, is chiefly valuable in those cases of pulmonary disease attended with bronchial catarrh. But I fear the trouble and detail necessary to its successful use will prevent many from employing the method, and I can easily see that the limitation of the power of Bergeon's method will cause it often to be set aside for other plans of treatment.

In conclusion, I believe our efforts in the therapeusis of phthisis should always be directed rather to those measures which tend to establish the general health, rather than to hunt up specific forms of treatment. Suitable climatic conditions, and judicious alimentation, and appropriate personal hygiene remain, in my opinion, the first principles in the therapeutic management of phthisis, and Bergeon's treatment should be considered an adjunct to these.

SIX CASES OF PHTHISIS AND ONE OF CHRONIC BRONCHITIS WITH EMPHYSEMA AND ASTHMA, TREATED BY RECTAL GASEOUS ENEMATA.[1]

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THE sudden and widespread attention which Bergeon's method of treatment of phthisis has received is somewhat remarkable, especially considering the demands which the method makes upon the time of the physician and his assistants. The chief reasons for this interest lie in the great frequency of the disease, the unsatisfactory results of treatment in a large proportion of cases, the professional standing of Dr. Bergeon, who practised his method for two years before giving it wide publicity, and the rather enthusiastic notice of it by Dr. Henry Bennet in the *British Medical Journal* of Dec. 18, 1886. In this country professional utterances have thus far been cautious. The daily press has, however, shown its characteristic enterprise in bringing the new method into notice.

As soon as Bennet's article appeared I resolved to try the treatment, having suitable cases at command. An apparatus was made and about the middle of January we began to apply the treatment. The chief difficulty which we encountered at the outset was in securing a natural sulphur water.

[1] Read at the meeting of the Association of American Physicians, Washington, June 3, 1887.

Chamberlain has used sulphide of calcium as a source of the H_2S gas and without ill effects: the inflammable character of this substance and its destructive action on rubber decided us against its use. Bergeon states that an artificial H_2S water does not act as well as a natural one. But it is very hard to understand in what respect sulphuretted hydrogen evolved by the passage of carbonic acid gas through a solution of sulphide of soda, differs from sulphuretted hydrogen made from sulphide of iron and sulphuric acid. A definite chemical combination must be always the same. Reasoning thus, we made our sulphuretted hydrogen and passed a full stream of it through water in pint beer bottles. At first the gas was allowed to flow through each bottle for about five, subsequently for two to three minutes, as experience made us think that our patient was getting too much of the gas. Whether this reduction in time really resulted in any reduction of the strength of the solution is very problematical. Water at the ordinary temperature and pressure of the atmosphere will dissolve about three times its own volume of H_2S gas. We feel safe in assuming that our solution contained a double volume of the gas. A half litre of solution thus contained one litre[1] of gas. The source of sulphuretted hydrogen which is recommended by Bergeon is the water of Eaux Bonnes, through a half litre of which carbonic acid is passed, setting free the sulphuretted hydrogen from its combination with soda. The amount of H_2S gas which can be developed from the sulphide of soda contained in one half litre of Eaux Bonnes water is about 3 c.c. Morel, Bergeon's pupil, says that the same bottle of water can sometimes be used a second time, all the H_2S gas not being utilized at one injection. But let us grant that the gas capable of development from one half litre is exhausted in one administration, and that all the 3 c.c is passed into the intestine, thence absorbed into the veins and exhaled from the lungs. It is somewhat difficult for one who is not a believer in infinitesimal doses to feel convinced that so very small a quantity can exert a marked effect of any kind. The solutions which have been used in the Hopital Cochin in Paris contain, according to Prof. H. C. Wood,[2] about 150 c.c. H_2S to the dose, and are consequently fifty times as strong as the Eaux Bonnes water.

The treatment is a product of Koch's discovery of the bacillus tuberculosis, and was based on the idea of bringing a substance hostile to their life, but not injurious to their host, into intimate contact with the animals. Bergeon finds that the sputum in tubercular cases still contains bacilli, even when it is reduced to mere mucus, a fact which seems to show clearly enough that the gas is not fatal to this form of organism. The good effects which he sees follow the treatment he now attributes to the antiseptic (?) virtues of the gas and its curative effect on local lesions. Sulphuretted hydrogen is certainly not inimical to the bacteria of putrefaction. Trudeau has treated cultures of Staphylococcus aureus and of the bacterium of blue pus with Richfield Spring and Eaux Bonnes water, and finds that the organisms are none the worse for the gas. He also treated a pure culture of the bacilli of tuberculosis in the same way with similar results. On the other hand Niepce found that tubercular sputum exposed for ten minutes to an atmosphere containing three per cent. of H_2S was entirely innocuous to rabbits, while the same sputum first exposed to the gas produced the disease in every animal inoculated with it.

It may be that the gas is a source of actual pleasure to the germs, and yet that it renders inert in some way the poisonous products of their activity—ptomaines and leucomaines. But here our knowledge is so slight that all is little more than speculation. The carbonic acid is thought to be therapeutically inert, except in so far as it obviates danger of irritation from the sulphuretted hydrogen. (Morel).

If H_2S gas passing through the lungs after introduction through the general venous circulation, exerts any preventive or curative influence on disease of those organs, New England, where probably more beans are consumed than in any other equal area of the earth's surface, ought to enjoy a remarkable immunity from tuberculosis and other affections of the respiratory tract. I do not need to tell you that such is not the fact.

The cases which were selected for the treatment were most of them far advanced. In acting thus we thought we were putting the method to a fairer, if severer, test. Great improvement in comparatively early cases, both in and out of hospital, under a general common sense treatment with full diet, is so common that one cannot but feel very sceptical as to the real value of any special treatment which may be superadded. A moderate improvement after special treatment in cases which were not doing well under general treatment is, it seems to us, more conclusive as to the merits of the former. Even here there is, however, a source of error which must be kept in mind. A new method of treatment is not infrequently followed by decided, though temporary, improvement in cases which are really incurable, though the influence thus brought to bear on the gray matter of the cerebral cortex. This sort of influence is as old as man himself, though since it has received the name of the "mind cure" the laity seem to think it an invention of the last year or two.

CASE I.—A delicate, nervous girl of eighteen, with advanced disease of the lower left lung, losing ground but free from fever. Bacilli in sputum.

Jan. 20, 1887. Two enemata, each of about one litre. She complained during the injection of some abdominal discomfort, but had no sharp pain.

21st. An enema of one litre in A.M. During the injection she complained of abdominal discomfort, was very pale and somewhat cyanosed. The pallor seemed to increase during the injection. All through the day she had abdominal pain, and was much prostrated. On account of the remonstrances of the patient and the apparently unfavorable effect of the injection, the treatment was omitted. A month later she was discharged at her own request, and we have heard that she has died since then.

[1] A litre is about a quart

[2] Therapeutic Gazette, April 15, 1887.

CASE II.—A woman of forty, with advanced disease; profuse expectoration containing bacilli; prostration; in constant fever.

Jan. 19. Two enemata, each about one and a half litre. No discomfort ensued.

20th. Two enemata, each about one and a half litre. In P. M., after second enema, a loose involuntary dejection with much flatus.

21st. At morning visit seemed very weak; lay on her back and was unwilling to move. Temp. 97.5°; pulse 120, very small and compressible; no enema was given.

24th. Strength and general condition improved over that of the last few days. The cough is much less frequent and the expectoration is diminished one-half. One enema of one litre.

25th. Two enemata, each one and a half litre, followed by no immediate discomfort.

26th. Weakness again very marked; a loose dejection during night. Treatment omitted.

Feb. 1. Sitting up and feels better. When it was suggested that the treatment be resumed, she remonstrated on the ground that it made her feel very badly, and no more enemata were given. She had six in all. A month later she died, gradually failing at about the same rate as before the special treatment was begun.

CASE III.—A girl of eighteen, in fair general condition, with limited consolidation at the right apex; scanty expectoration containing numerous bacilli. Not confined to bed and free from pain. Entered the hospital January 22, 1887.

Jan. 25. One enema of one litre without pain or discomfort.

26th. Two enemata, each one and a half litre. A little abdominal pain followed the injection.

27th. An enema of one and a half litre in A. M. Abdominal pain and vomiting continued through the day and the treatment was not resumed until

Feb. 11. Some loss of weight having been incurred during the interval and the physical signs having increased in extent. One enema of one litre.

12th, 13th, and 14th. Each A. M. an enema of one and a half litre without any unfavorable symptoms.

15th. One and a half litre in A. M., followed by nausea and vomiting, which continued during the day.

16th. Vomiting continues; no abdominal pain or discomfort; severe frontal headache.

The treatment was not resumed. The appetite and digestive power soon returned and were maintained. There was improvement in flesh and strength, though the physical signs showed that the disease was advancing. The whole number of enemata given was nine.

CASE IV.—A woman of forty, with slight signs at both apices; very marked rational signs; very harassing cough with moderate expectoration, which contained bacilli. Confined to bed.

Jan. 22 and 23. One enema of one litre each day, followed by no bad symptoms.

24th. One enema of one and a half litre. Slight abdominal discomfort toward the end of the injection.

25th, 26th, and 27th. Each day one enema of one and a half litre. Complained of discomfort after each enema, sometimes lasting for several hours.

28th. Diarrhœa and vomiting last night; is very weak and the cough is very severe. No enema.

Feb. 1. Vomiting has continued for the past three days and diarrhœa returned last night. The treatment was not resumed.

20th. She was discharged at her own request and died not long after. She had six enemata in all. While she was in the hospital her husband died; his loss and the helpless condition of her children, caused an intense depression of spirits which rendered any treatment quite hopeless.

CASE V.—A woman of forty, with chronic and advanced disease and cavity formation; moderate expectoration, nummular in character. Confined to bed.

Feb. 1. Enema of one litre without bad symptoms.

2d. Enema of one litre followed by slight abdominal pain.

3d. Enema of one and a half litre; expectoration rather less abundant.

4th and 5th. Each day one enema of one and a half litre. Says she feels better.

6th. Last night free hæmoptysis. The treatment was omitted and not again resumed. The hemorrhage recurred at short intervals until March 1st.

March 14. She was discharged at her own request, wishing to die among her friends. I have since heard that this wish had been fulfilled. She had five enemata in all. The effect was favorable rather than otherwise, and it is not likely that the treatment had anything to do with bringing on the hemorrhage.

CASE VI.—A woman of twenty-five, advanced in phthisis, with a large cavity at the right apex; abundant purulent expectoration containing bacilli. Is able to sit up most of the day. Much of the time has high fever and is then comfortable; if the temperature falls to the normal, she complains of feeling cold with general discomfort.

Feb. 15. An enema of one litre.

16th. An enema of one and a half litre. No discomfort.

An enema was given once a day until the 21st, the expectoration diminishing in quantity.

22d. Two enemata, each two litres, were given and repeated daily.

During the night of March 1st she was kept awake by abdominal pain.

March 3. She had severe left hemicrania with flushed face and hot skin. No enema.

4th. No enema; has lost upward of a pound in weight since treatment was begun.

5th. Two enemata of two litres each.

6th. Nausea, occasional vomiting; no enema.

7th. Nausea, weakness, feels flushed, pulse small and rapid.

8th. Feels better; one enema of two litres.

9th. One enema of two litres.

10th. Two enemata of two litres each.

11th. One enema. Headache and nausea in P. M.

12th. Headache and vomiting. Treatment was discontinued.

22d. No material change in the condition of the patient since February 1st.

Since the enemata were omitted headache and nausea have been absent.

During four weeks the patient had thirty-one enemata.

CASE VII.—A woman of thirty-five, in good general condition, for a long time subject to bronchitis, with occasional asthmatic attacks. The expectoration is often streaked with blood, and during the last seven years she has raised clear blood a number of times. Several of these attacks of hæmoptysis while under our observation in the hospital. The physical signs indicated only widespread bronchitis and moderate emphysema. The sputum was repeatedly examined for bacilli, with negative result.

Feb. 7. Enema of one and a half litres.

8th–9th. One enema daily without discomfort. Patient thinks she is better, and coughs less.

8th. Two enemata, of one and a half litres each.

9th. Two enemata, of two litres each. Sleeps better, and reports that "spit comes easier, and she can breathe deeper."

14th. After her second enema she complained for the first time of some abdominal pain.

17th. Cough is loose and infrequent; expectoration is less abundant, still streaked with blood.

27th. One or two injections were given daily up to this date, when she vomited, feeling chilly in the night. An enema was given, and shortly after the catamenia appeared. The treatment was omitted, and was not resumed. She had thirty-four enemata in twenty-three days.

March 23. Her general condition is much improved; the cough is infrequent, the sputum scanty. An occasional râle can be heard on the left lower back, and there are signs of slight emphysema.

During the gas treatment the patient had iodide of potassium, and linseed oil with simple syrup.

It would be easy to attribute a large share of the marked improvement in this case to the special treatment, were it not for the fact that a few months before the patient had gone through a similar, though rather less severe attack of bronchitis, with asthmatic seizures, in the hospital, and had made a recovery quite as rapid and satisfactory under ordinary medication through the stomach.

Summary of cases:

I. Number of enemata, three. They were followed by slight abdominal discomfort and decided depression of the general strength.

II. Number of enemata, six. They were followed by marked depression and, at one time, a condition nearly approaching collapse, with diarrhœa.

III. Number of enemata, nine. They were followed by slight abdominal discomfort, nausea, vomiting, and general depression.

IV. Number of enemata, six. They were followed by abdominal discomfort, nausea, vomiting, and diarrhœa; secondary to the vomiting, partial collapse.

V. Number of enemata, five. Though the patient was very weak, no local or general ill effect was noted; the patient thought she felt better. Treatment omitted on account of hæmoptysis.

VI. Thirty-one enemata in four weeks. No abdominal or general discomfort. No good effect except a diminution in the expectoration. Treatment finally omitted on account of nausea and headache.

VII. Thirty-four enemata in twenty-three days. No untoward symptoms. Gradual improvement under, and possibly through the gas treatment. (Emphysema and bronchitis.)

Before we attempt to draw any conclusions from the above cases, a few preliminary statements are in order. Bergeon's method was followed carefully, save in respect to the use of an artificial and much richer sulphuretted hydrogen water. It was found that the immediate discomfort was much less if the H_2S water was made quite hot before the CO_2 was pumped through. No odor of gas could be detected in the breath, nor was paper moistened with a solution of acetate of lead blackened when held before the mouth. No irritation of the rectum was noted in any case. The enemata were given two hours after breakfast and dinner.

We are not the only observers whose results have not been inspiring. De la Roche[1] reports three cases, two of phthisis, one of bronchial asthma. One of the tubercular cases improved in all respects; the second did well also, but on the twentieth day of the treatment severe colic came on, which ceased as soon as the treatment was stopped. On the resumption of the injections the colic returned, and a diarrhœa carried off the patient in a few days. In the asthmatic case the treatment had "effets désastreux," on the third day after the treatment was begun the patient had a paroxysm of unusual severity, from which it took her a fortnight to recover under a more customary treatment.

Osler[1] reports that a patient at the University Hospital in Philadelphia, nearly expired after one administration of the gas. Dana[2] speaks of nausea as resulting from it in some cases.

The number of our cases is small, but we think ourselves justified in drawing the following conclusions:

1. Toxic symptoms may follow the injection of sulphuretted hydrogen gas into the rectum, among such symptoms being nausea, vomiting, general depression or collapse, diarrhœa, and headache.

2. Strong artificial solutions of sulphuretted hydrogen mixed with carbonic acid, and injected into the rectum, are apt to cause abdominal discomfort; the risk of this is diminished by warming the solution of the former gas.

3. This method is in no sense a specific for phthisis. If useful, it is only as auxiliary to older and generally accepted methods.

4. The only benefit which we saw in our cases that can fairly be attributed to the enemata, was diminution in the amount of the expectoration.

To these conclusions we should like to add two impressions:

1. Recorded experience seems to show that there is considerable difference in different individuals—and perhaps in the same individual at different times—in the amount of sulphuretted hydrogen which can be safely injected into the rectum. *A priori* reasoning makes it almost incredible that the amount of the gas which can be passed through the lungs when Bergeon's method is strictly followed, is large enough to have any therapeutic value.

2. The good effects which have unquestionably followed the treatment on this side of the water, as well as in France, are, perhaps, largely attributable to the stimulus afforded by a novel method of treatment, which is of such a nature that the patient cannot but feel that not only something, but much is being done for him.

[1] Journal de Med. de Paris, Jan 2, 1887

THE TREATMENT OF PHTHISIS BY GASEOUS ENEMATA.[3]

BY W. PEPPER, M.D., AND J. P. CROZER GRIFFITH, M.D., OF PHILADELPHIA.

INDUCED by the importance of the subject, and by the discouraging results of the various methods of dealing with phthisis, we commenced some experiments with Bergeon's treatment with gaseous enemata be-

[1] THE MEDICAL NEWS, 1887, I, No. 13.

[2] N. Y. Medical Record, May 7, 1887.

[3] Read by Dr. Pepper at the meeting of the Association of American Physicians, Washington, June 3, 1 87.

fore reports of investigations by American physicians had appeared in the medical press. Our work has proceeded steadily but slowly, and this report is even yet chiefly of a preliminary nature, since many of the cases are still under observation.

Following the papers which have just been read, and all that has been previously written on the subject, it will not be necessary to speak of the theoretical grounds on which this treatment was first advocated by its proposer, or to dwell upon its details.

Method.—In private cases we have used the Morel apparatus, substituting a solution of sodium sulphide —ten grains in one and a half pints of water—for the natural sulphur mineral water. In hospital practice we have sometimes pursued the same plan; sometimes proceeded in the following manner. The carbonic dioxide was procured already compressed in the large iron receivers in use for soda fountains. It was passed from these through the solution of sulphuretted hydrogen into a five gallon gum bag, from which the patients then received the injections. Thus in one case the bag contained pure carbonic dioxide, and in the other the gas already medicated. It could not be discovered that it made any difference which method was followed.

The injections were given from one to three times daily; and from two to six or more quarts of gas were employed. The administration of the injection lasted from fifteen minutes to one-half hour or longer, except in those cases in which the tolerance of the bowel was very quickly exhausted, and but little gas could be taken.

It is to be regreted that the observations made are not in every case so complete as could be desired. This was often unavoidable; in some cases because patients were treated in homes where no accurate record of temperature and weight could be obtained; in others, in hospital practice, because patients sometimes left before a final examination of the lungs could be made, and the presence or absence of improvement of physical signs noted.

The total number of patients upon whom the treatment was tried equals 34. 10 of these cannot be regarded as test cases in any sense, since the injections were given during too short a time to allow of any conclusions being formed. In one of these there seemed to be inability to retain the gas in the bowel; in another ill defined but unpleasant subjective sensations were produced, and the patient begged to have the treatment discontinued; a third patient died a few days after the enemata were begun; a fourth has but just commenced to receive the injections; in three cases colic was so intolerable that the treatment could not be persisted in, and three dispensary patients ceased their visits after two or three days.

Deducting then these 10, there remain 24 test cases to whom the enemata were administered for from 12 to 56 days; the average being 25.

Other treatment was frequently combined with that of Bergeon. Had the results been favorable, this fact might be urged against the justice of our conclusions. As the sequel shows, it can have no influence, except to militate against occasional possession of beneficial action by the gaseous enemata.

Probably the most convenient method of estimating results is to study the symptoms individually, and to notice the effects produced on them by treatment.

Fever.—The greatest improvement was noticed in the reduction of fever. The total number of cases in which a daily record of temperature was kept equals 16. Of these there were 4 whose temperature was more or less reduced during the administration of the gas. In 11 there was no appreciable effect; and in 1 the fever actually seemed to increase. In another instance (one of the 10 excluded from the test cases) it rose quite decidedly during the four or five days in which the treatment was given; though this was probably only a coincidence. In no case was the temperature brought from a persistently febrile to a continuously normal condition.

Weight.—In 20 cases in which the weight was recorded at frequent intervals, there were 8 in which the gaseous treatment was attended by more or less gain; the greatest increase being eight pounds in thirty-seven days. It is worthy of note that in this case there seemed to be no improvement in health. In 6 patients the weight remained stationary, and in 6 it was diminished, with or without a change in the severity of other symptoms. The increase in weight took place chiefly in hospital cases, and we cannot but believe that it was due very largely to complete rest and good food.

Cough.—Improvement in this respect was not even so marked as in the preceding symptom. In 7 of the 24 cases there was said to be more or less diminution of cough. In 2 of these this was undoubtedly true, as testified to by the attendants and friends. In the others the well-known hopeful disposition of phthisical patients laid the truth of their statements open to suspicion. Moreover, in 1 of the 8 the removal of a large amount of fluid from the pleural cavity was probably the chief agent in producing decrease of cough, if any existed; and another patient was taking a cough mixture as well as the gaseous treatment. In 3 cases the cough seemed actually to grow worse;—this being probably *post hoc* merely.

Expectoration.—As regards the diminution of the amount of expectoration, we were able to come to more definite conclusions, since the question did not depend to such extent on the statements of the patients. Out of 24 cases the quantity was somewhat decreased in 4 instances. In 5 patients it became more abundant, and in one of these, to whom the gas had been given fifty days, the increase was very marked. In the remaining 15 no effect could be perceived.

Bacilli.—The sputum of 30 patients was searched for tubercle bacilli, and the microbes found in 27 instances. A second examination was made at the close of the treatment in only 11 cases, and in but 4 of these was there even an apparent diminution in the number. It is extremely doubtful whether there existed here any real decrease in the absolute quantity of bacilli in the sputum.

Dyspnœa was recorded in comparatively few cases, and in only 3 of these did the patients claim that they had experienced any improvement.

Night-sweats.—Here, too, the cases reported are not numerous, as many of the patients did not suffer from them. In 1 case they were checked, and in 7 unimproved.

Physical examination.—The result of the physical investigation of the lungs of each patient was noted at the beginning of the gaseous treatment: and a final examination was made at the close of the treatment in every instance possible. As already explained, the latter could not always be accomplished. Nevertheless, a final study of the lungs was made in a considerable number of cases, and in *not a single case* was any improvement found. Even the patient who of all the 24 had made the greatest—and really very remarkable—progress, exhibited quite as many rales as fifty-six days before, when the treatment was commenced.

General condition, etc.—As regards the general condition of the 24 test cases under observation, there were but 4 in which any improvement could be noticed (2 decided, 2 slight), apart from the amelioration of the symptoms already mentioned. 7 patients grew worse, and 1 died. No observations were made on the temporary effect of the gas on *pulse* and *respiration*. The *appetite* was sometimes increased but usually not much affected. The enemata had a decidedly *hypnotic* influence in 3 cases.

Unpleasant effects.—As regards unpleasant symptoms produced by the treatment, one patient complained of feeling faint after the first injection; another had headache, and another suffered frequently from dizziness. The last patient had been given on one occasion, before we had commenced our observations upon him, about one quart of a mixture of equal parts of carbonic dioxide and hydrogen bisulphide, and promptly developed the most alarming symptoms. The pulse almost disappeared and the respirations became shallow; the patient was covered with cold perspiration, and completely lost consciousness. This condition lasted about three minutes, and the physician with him was obliged to use most energetic stimulation before the patient was out of danger. This incident proves the power and possible danger of sulphuretted hydrogen; but is not, of course, a contra-indication to the proper administration of the gas.

The tendency to nausea if the injection was given too soon after a meal, and the inclination to evacuate the bowels were also noticed in some of our cases.

But the only unpleasant symptom of any real moment was *colic*. This was complained of as often severe in at least 11 of the 24 cases: and, as already stated, 3 others suffered from it to such an extent that the treatment could not be employed. One individual was so severely attacked that he rolled upon the floor in pain. Colic was slight in a few cases, and not complained of at all in many. As other investigators had not written of much annoyance by it, we were led to suspect something faulty in our method of administration, but the most careful investigation has failed to reveal anything amiss.

While true that too large a quantity of gas gave pain, yet the colic was very often not controlled by giving smaller amounts. In some instances, too, equal volumes of gas at one time produced intense suffering, and at other times were well borne. Nor did a slow administration of the injection appear to prevent the cramp. The presence of air was carefully excluded; and, fearing that the iron reservoirs might possibly contain it, we discarded them for a time, but with no modification of the result. Moreover, colic was as often suffered by the private patients as by those in the hospital where the compressed gas was usually employed. Frequently the bowel seemed to grow more tolerant as time passed, while in other patients the reverse was the case.

A few of our cases serve as excellent warnings against the drawing of hasty and unwarranted inferences. In one of these the patient had abundant expectoration, troublesome cough, and signs of pulmonary consolidation, combined with a large element of chronic bronchitis and emphysema, besides being annoyed greatly by dyspepsia. The enemata were tried for a few days, but abandoned on account of the severe colic. He was then put upon a simple stomachic mixture, combined with good food and rest. He left the hospital after about two months, with the amount of expectoration very much reduced, having gained eight pounds, and saying he had not felt so well for a long time. Had he been able to take the gaseous enemata we would have undoubtedly attributed the good effect to them.

Another patient made the greater part of a surprising improvement in general health two weeks before the injections were commenced. Had Bergeon's treatment been instituted two weeks earlier, it would have gained unmerited credit.

To summarize in a few words our observations: Febrile temperature was sometimes lowered, but never to any great extent. Cough and expectoration were occasionally lessened, but oftener unaffected, and sometimes even increased. Weight was oftener lost or stationary, but a decided gain was frequently made; due, perhaps, partly to the gas, and no doubt, in part, to the improved conditions of life. Dyspnœa and night-sweats were rarely benefited; the physical signs were in no case altered: the general health was but seldom made better, and severe colic was a frequent and annoying symptom.

Our conclusions—so far as they can be formulated in a preliminary report of comparatively few cases—are: That the treatment of phthisis by gaseous enemata has had very undue value attributed to it; that it is seldom of any real benefit, but that it may prove serviceable in occasional cases.

Thanks are due Dr. D. T. Lainé, resident physician to the University Hospital, for his coöperation in the study of many cases; and to Dr. William E. Hughes for the notes of a number of patients treated by him in the Dispensary of the hospital. Prof. William Osler has also courteously placed at our disposal several cases of phthisis in his wards.

MEDICAL PROGRESS.

SUCCESSFUL REMOVAL OF A TUMOR FROM THE SPINAL CANAL.—On June 9th, MR. VICTOR HORSLEY removed a tumor from the spinal canal of a gentleman aged forty. The diagnosis of compression of the spinal

cord by a morbid growth was made by Dr. Gowers, who saw the patient with Dr. Percy Kidd. The patient was suffering from paraplegia, which commenced gradually six months ago, and from pain round the chest of four years' duration. Sir William Jenner afterward saw the patient, and confirmed the diagnosis. Dr. Gowers suggested that an attempt should be made to remove the growth. From the history of severe neuralgic pain in the back and along the course of the left sixth dorsal nerve which preceded the paraplegia, it was considered probable that the growth commenced in the posterior root of the nerve, and afterward produced pressure on the cord. The operation was performed by a long incision in the mid-line of the back, having its centre about the fifth dorsal, down to the spines of the vertebræ. The muscles were cleared off from the laminæ and retracted. The spines were removed by bone forceps, and then the laminæ trephined. An incision was made through the membranes and the cord examined, a tumor about the size of the tip of the little finger being eventually found on the posterior root of the nerve about the level of the third dorsal vertebra. This had pressed the cord forward and to the right, producing a deep depression in its substance. It was removed with the nerve to which it was attached. The incision through the membranes, which was at least three inches long, was not sutured; the wound in the soft parts was closed with sutures and drained. Strict antiseptic precautions were taken at the operation. Since the operation there has been no rise of temperature, and the pain has diminished. The painful spasmodic action of the muscles of the lower extremities from which the patient suffered has diminished, and there has been less rigidity of the legs, but the paraplegia continues. The growth, which was of a pinkish color, elastic and vascular, has not yet been submitted to microscopical investigation.—*Lancet*, June 18, 1887.

BERGEON'S TREATMENT AT VENTNOR.—DR. SINCLAIR COGHILL reports his experience with this treatment at the Isle of Wight as follows: My experience, so far, of Dr. Bergeon's treatment of consumption and other lung affections, both in private and hospital practice, has been altogether most encouraging—indeed, in some instances, surprising. I believe it is the greatest advance by far that has ever been made in the therapeutics of pulmonary diseases.—*British Medical Journal*, May 21, 1887.

DEDUCTIONS OF THERAPEUTIC VALUE FROM THE CLINICAL STUDY OF THE REACTION OF THE GASTRIC JUICE.—LANDOIS, in the *Revue de Médecine* of May 10, 1887, draws the following conclusions from an extended study of the gastric juice:

Hydrochloric acid when given for deficiency of gastric juice, should be given in large doses, forty to fifty drops; the quantity of pepsine given is not so essential.

The patient should take the acid in small doses of eight or ten drops every fifteen minutes until the entire dose has been taken: thus taken after meals abnormal fermentation is greatly lessened.

The treatment of hyper-acidity is most successful when alkaline waters are employed (Vichy, Carlsbad, etc.). Care should be taken that their usage be not too prolonged.

In simple gastric ulcer the neutral or alkaline reaction of the contents of the stomach is not necessary to a cure; the excess of acid only need be neutralized. Hydrocarbons must be largely removed from the diet and nitrogenous food substituted.

Lavage aids by removing abnormal acids and furthering the digestion of starches.

AGARICIN AS USED IN BELLEVUE HOSPITAL.—Agaricin (the active principle of agaricus albus) gives uniform results in checking excessive perspiration in phthisical and fever patients. The following formula is used at Bellevue Hospital:

℞.—Agaricini (Merck) . . . gr. x.
Atrop. sulph. . . . . gr. j.
Acidi sulph. arom. . . . ♏ 1200.
Dissolve and filter.

Dose—♏ x, containing $\frac{1}{12}$ gr. agaricini, $\frac{1}{1\,2\,0}$ gr. atrop. sulph. and ♏ x arom. sulph. acid. To be administered in syrup or simple elixir.

It may also be advantageously given in pill form, combined with Dover's powder. Thus:

℞.—Agaricini . . . . . gr. ij.
Pulv. Doveri . . . . . gr. xxv.—M.
Ft. pil. No. xx.
Sig.—One pill five or six hours before retiring or sweat comes on. Its action is slow, hence the necessity for giving it early.—*Quarterly Bulletin*, April, 1887.

BACTERIA PECULIAR TO CHILDREN'S DISEASES.—VICTOR BABES, of Budapest, in post-mortems upon children has found in most cases of diseases generally fatal pathogenic bacteria, not like those already described, most of them streptococci and saprogenous bacilli.

In scarlatinal nephritis, in addition to other bacteria, chain bacteria were found closely resembling those of erysipelas. Inoculation in a rabbit's ear with those germs proved rapidly fatal, the animal presenting a widely diffused erythema, closely resembling the eruption of scarlatina. Cultures of these bacteria become rapidly innocuous. Scarlatina is probably caused by these bacteria; as Löffler, Heubner, and Fränkel have thought.

In a case of ceratomalacia a bacillus was found which produced in cultures decomposition, and when inoculated produced disease in mice and rabbits. Microscopical examination of the intestines in cases of dysentery revealed small curved bacilli in the mucous membrane and glands, and also in the organs of the body. When transplanted into agar they grew rapidly and liquefied gelatine. Mice were killed by inoculation, and germs were found in them which grew upon agar: in rabbits, inoculation produced a hemorrhagic, intestinal inflammation resembling dysentery.—*Centralblatt für Kinderheilkunde*, No. 4.

THE DEVELOPMENT AND PRESERVATION OF THE BACILLUS OF TYPHOID.—POUCHET read a paper before the Academy of Medicine of Paris at its session of April 26th, in which he gave the following conclusions:

The conditions of life of the bacillus are within such narrow limits that its destruction is accomplished by many agencies; its proliferation is also arrested by many

constituents of organic bodies. Cultures upon peptonized gelatine abound in bacilli in proportion as the amount of peptone is small: they generally disappear at a proportion of one per cent. Salts of copper, potassium, and ammonium hinder the development of the bacilli; this is also true of acids. A saccharine or albuminous liquid is a bad culture medium.

A gelatine of the following composition,

Distilled water	1000 parts.
Neutral tartrate of potash	1 "
Sugar	20 "
Phosphate of ammonium	1 "
Sulphate of magnesia	½ "
Extract of flesh	25 "
Gelatine	150 "

in which the greater part of the microorganisms contained in water proliferate with activity, does not permit the development of the typhoid bacillus, but the germ preserves its vitality and proliferates energetically if a good culture medium is added (bouillon of intestine, for example), which has been previously inoculated. The typhoid bacillus persists and develops better in pure water than in foul.

The best culture medium is a nutritive gelatine prepared with bouillon, made like a veal broth, from intestine cleared of fecal matter by lavage. In such material the proliferation is very active, and the cultures better than in any other medium.—*Progrès Medicale*, May 7, 1887.

A Rectal Injection for the Convulsions of Children.—Simon advises the following:

Musk	gr. 3.
Camphor	gr. 15.
Chloral hydrate	gr. 8.
The yolk of one egg	
Distilled water	℥ 5.

The intestine should be first emptied by an enema of oil.—*Les Nouveaux Remèdes*, May 8, 1887.

The Dietary of Children Inheriting a Tendency to Phthisis.—Dr. J. Milner Fothergill writes as follows in the *Journal of Reconstructives* for April, 1887:

A wise and proper dietary in the nursery would have saved many a consumptive now slowly perishing, fighting a losing fight, in the Yellowstone region, the high Swiss valleys, along the coast of Florida, or in the Riviera or Egypt. The farmer always believes in the young cattle that have been liberally fed, or, in bucolic phrase, "well done to" in early calf life. As a physician who has had special opportunities of seeing phthisis, I prefer as patients those who have been judiciously reared in the nursery, when any risky phthisis is looming up. To supply fat to the growing organism sometimes a little cunning is necessary. The child does not like even the sight of a piece of animal fat, it revolts at the mere appearance, much less ever tries to eat it. The sweet slice of fat so toothsome and acceptable to those of stronger digestion and more capable assimilation, is repugnant to these more delicate organisms. Let that be the second fact to be borne in mind in the reformed dietary of the nursery. Fat must not be offered in visible, tangible form, except as butter. It must be hidden. The potatoes must be mashed with liberal quantities of milk and butter warmed, if cream be beyond the purse. Then finely minced fat must be liberally supplied to the suet pudding (which is all the better for having some treacle in it—just enough to give it a light cinnamon-brown hue). Bread and butter pudding is an admirable nursery food. When the milk pudding is being served it is well to stir in a good lump of butter; though it must be admitted that this is detrimental to its appearance. But, surely, where is the mother who would weigh her child's existence and the appearance of a nursery pudding in the same scale? Perish the unnatural thought! Where economy is the order of the day, rice stewed with cracked bones is at once palatable and highly nutritious.

Where the assimilative powers are very feeble, then the milk pudding should be made with farina that has already made the acquaintance of heat. It is well to make it of broken biscuit. If made of equal parts of broken biscuit and ground malt, the resultant product is an ideal food, and those readers who are not prepared to take this upon trust and require something more than my unsupported word for the fact, had best forthwith try it, and let "the proof of the pudding be the eating." One proviso, however, it will in prudence be well to put in, viz., there are some palates to which malt is distasteful; and, of course, to these the pudding is a failure. And then let another fact be borne in mind by the food reformer presiding over the nursery, and it is this: malt sugar is not so distinctly and powerfully sweet as is cane sugar or beet sugar, but its flavor is finer; on the other hand, it does not nearly so easily undergo the acetous acid fermentation. Two great matters are involved in this: (1) acidity of the stomach, and (2) dental caries. Cane sugar decomposing into acid, is most favorable to the development of dental caries. The delicate children who are likely sooner or later to die of phthisis in some of its forms, are prone to bad teeth. The imperfect dentine is soon eaten away. Bad teeth interfere with mastication, and so are a fertile source of indigestion; while phthisis is a malady of imperfect nutrition.

Where only small meals are or can be taken at once little interludes are desirable. They should not consist of ordinary sweets made of common cane sugar, but rather of a draught of milk sweetened by malt-extract, a dry malt preparation, or the homely treacle. What unconscious genius introduced treacle into the nursery dietary? Male or female, no trace remains; and yet that individual has been the savior of many a little mite. Treacle has rather sank in public estimation of late years. It is cheap, and therefore of doubtful reputation. It is certainly rather a troublesome thing to handle; and, as our delightful friend, Oliver Wendell Holmes, says, it is not very easy to pour out the last of the contents of a jug—when the contents are treacle. But granting all this, treacle has its good qualities. As said before, it is a capital addition to a suet pudding. Treacle and butter in the centre of a plate of porridge have their attractions. Yes, and their memories, too, gentle reader! Then, in combination with butter, it makes toffy. A marvellous concentrated food is toffy, and an extra ration of toffy in cold weather is an excellent practice. As simple body-fuel to keep up the lamp of life toffy is an excellent food. Rations of toffy are far more acceptable than spoonfuls of cod-liver oil. Some time ago, when on the committee of the West-

moreland's Society School, I put this view forward, and the experiment of toffy in cold weather was tried and found to work capitally, the health of the children being most satisfactory; while, it is almost needless to say, the children approved of it. When toffy is suggested for a fastidious child, which loathes fat and dislikes cod-liver oil, a derisive smile breaks over the countenance of the mother. It is ignorance sneering at knowledge! Knowledge can afford it. But, prejudice and ignorance to the contrary, notwithstanding, toffy is an admirable combination, and has done yeoman service to many a delicate child, as my hospital experience can testify.

Cocaine and Borated Cotton.—Cotton prepared after the following formula is very useful in burns:

Solution of cocaine, 2 per cent.	30	parts.
Boric acid	2	"
Glycerine	4	"
Carbolic acid	1	"
Absorbent cotton	30	"

Dissolve the boric acid in glycerine, add the cocaine solution, and to this add the carbolic acid. The cotton should be thoroughly soaked in the mixture, and dried in a current of warm air.—*Les Nouveaux Remèdes*, May 8, 1887.

Expulsion of the Uterus during Parturition.—Francisco, of Madrid, reports the following case:

A primipara, aged twenty-three, previously in good health, commenced a normal labor which continued until the head entered the excavation of the pelvis. Suddenly, after a violent pain, the uterus was expelled from the pelvis, the os remaining undilated, and the vagina being completely inverted.

While the medical attendant and his consultant were deliberating as to the plan of action, two uterine contractions expelled a well-developed female child. Two deep lacerations were produced upon the left side of the vagina.

After the ligation of the cord, and the removal of the placenta, the uterus was replaced and retained by a bandage.

Complete and uninterrupted recovery followed.—*Gazette Hebdomadaire*, No. 10.

What Cases of Phthisis are Curable by Climate.—Dr. Lindsay writes as follows in the *Lancet* of April 30, 1887:

Speaking generally, only chronic cases with fair reaction are suitable for climatic treatment. If the disease has a well-defined onset and threatens to run an acute or semi-acute course; if the patient steadily loses ground and shows no gain in weight or other sign of rally under treatment; if the process in the lung is progressive and there are no evidences of repair—in each and all of these cases the interests of the patient will be best served by vetoing climatic treatment. The patient will die soon and die anywhere, and he may as well be allowed to pass his last days amidst the comforts and sympathies of home. Cases marked by circulatory weakness, with fast, feeble, fluttering pulse, slight cyanosis, and persistent coldness of the extremities, are very unfavorable for climatic treatment, and should on no account be sent to the mountains. Cases in which laryngeal or intestinal ulceration or renal complication has supervened upon the ordinary type of the disease should be allowed to die at home. Cases in which anæmia appears early and is well marked are unlikely to respond to climatic treatment. On the other hand, we see a vast number of cases of phthisis in which the onset is very gradual and the constitutional involvement for a long time slight. Such cases nearly always improve, even in this climate, under a system of high feeding, fresh air life, and cod liver oil, and I entertain no doubt that a considerable proportion of them may be completely cured by removal to a suitable climate and the adoption of a prudent mode of life.

Antipyrin in Otalgia Nervosa.—Gomperz, of Vienna, reports good results from his use of antipyrin in doses of from fifteen to twenty-five grains in seven cases of uncomplicated nervous otalgia. One of the cases was double, had persisted more than a month, and was cured by fifteen grains of antipyrin. Another took thirty grains. All were improved.—*Wiener med. Presse*, May 1, 1887.

Treatment of Gastralgia.—Gallard advises the following treatment:

Before each meal a drop of this mixture on a lump of sugar.

R.—Morph. hydrochlorat.	grs. 1½.
Aquæ lauro-cerasi	♏ 75.

At the end of a month replace the morphia by one of the following pills:

R.—Ferri arseniat.	grs. 1½.
Extr. valerian.	grs. 75.—M.

Ft. pil. 50 in num.

The treatment should be thus alternated month by month. While using the solution a spring-water containing iron should be drunk at meals. While taking the pills wine or carbonated water should be taken.

Two hours after dining a teaspoonful or tablespoonful of the following should be taken:

Potassii bromid.	℥ 2½.
Syr. aurantii cortic.	℥ 5.—M.

Cold shower-baths, of fifteen seconds, may also be used.—*Les Nouveaux Remèdes*, May 8, 1887.

Treatment of Palpitation of the Heart.—Dr. Benjamin Ward Richardson writes as follows in the *Asclepiad*, No. 14:

During an attack of acute cardiac palpitation, medical treatment of a direct kind can only be palliative. It is a common practice to place the patient in the perfectly recumbent position, but as this position leads, frequently, to breathlessness and much discomfort, I never enforce it unduly. The sufferers usually find out the best position for themselves, and standing up, and even gentle walking backward and forward, commonly appear to bring relief, as if the general muscular action equalized the local over-action.

For the actual palpitation, digitalis is the only remedy I have found of any positive service, and it combines well with remedies which have a tendency to promote, quickly, the cutaneous and renal excretions. I usually

prescribe the tincture of digitalis in five or ten minim doses, with half a fluidrachm of nitric ether, and two fluidrachms of the liquor ammoniæ acetatis. In instances where there has been prolonged sleeplessness with palpitation, I have combined morphia in full doses with digitalis with good effect, adding the narcotic dose to the formula just named.

In general treatment I am accustomed to follow, whether the heart be organically sound or unsound, the same methods as those described in my previous essay on intermittency. The organic bromides of iron, quinine, and morphia, and the mixture of iron carbonate, ammonia, and morphia, are excellent remedies. The only difference in treatment, in fact, relates to the use of alcohol, which, valuable in some cases of intermittency, is less compatible in cases of palpitation.

A FORMULA FOR THE TREATMENT OF TÆNIA TONSURANS:

Olive oil	30 parts.
Precipitated sulphur . . .	4 "
Oxide of zinc	4 "
Carbolic acid	1 "

To be used with frictions morning and night upon the shaven skin.—SÉE, in *Gazette Médicale de Nantes*, May 2, 1887.

COCAINE IN OBSTETRICS AND GYNECOLOGY.—DABBS writes as follows in the *British Medical Journal* of April 30, 1887:

1. I obtained equally good results from a 6 per cent. solution as from a 12 per cent. solution of the hydrochlorate), but in dry labors I now always use a 4 per cent. solution of the alkaloid itself in castor-oil. Into the thin, parchment-like os I put a cocaine-saturated plug of cotton-wool, which I renew (or rather replace with a fresh plug) about every half-hour, until fair dilatation has taken place.

2. In cases in which the labor progresses so slowly that assistance is needed, and the cocaine need not as yet be deposed in favor of chloroform, the form in which I have found ergot of most benefit has been as a hypodermatic combination of sclerotic acid, $\frac{1}{10}$ of a grain, and bimeconate of morphine, $\frac{1}{4}$ of a grain. By means of Burroughs's tabloids, I have been thus able to secure a certain degree more of uterine action, and with the bimeconate of morphine combined with the sclerotic acid and the internal application of the cocaine, have now seen many cases of almost absolutely painless dilatation of the os.

3. But of all uses for cocaine in connection with first labors, I have obtained the most gratifying results from the application of a 12 per cent. solution to the vulva and inside of the vagina during the slow progress of a case of marked perineal rigidity. I do not, of course, mean that the case is hastened much, but I do mean that the pain is lessened to an extraordinary degree.

4. My observations lead me to conclude that it is chiefly in primiparous (slow) labors that cocaine is of use (notably in breech cases), or in any case possibly in which the os dilates slowly and the perineal rigidity is well marked.

5. In cases in which the os has to be dilated by tents, I have soaked and partly enlarged the tents in a hot oleaginous solution of the alkaloid before introducing them, with, as I think, considerable success; and in cases of tender and irritable vaginæ in which, for any reason, the speculum has to be used (gynecological cases), I have adopted the practice with great advantage of previously painting the vaginal walls with the solution of cocaine in castor-oil before alluded to.

POWDERED RICE AS A STYPTIC.—According to the *Indian Medical Gazette*, powdered rice has marked hæmostatic properties. It is said that if mixed with lint in proportion of from ten to eleven per cent., the lint thus treated being used as a compress, it is more effectual than oxide of lime, subnitrate of bismuth, salicylic acid, or carbolic acid.—*Technics*, May 17, 1887.

AN APPLICATION FOR WARTS.—

R.—Hydrarg. bichlorid. . .	gr. 15.
Collodion	$\mathfrak{Z}$ $7\frac{1}{2}$.

Solve.

A small quantity is to be applied to each wart once daily.—*Journal de Médecine de Paris*, May 23, 1887.

A DIAGNOSTIC POINT IN THE DIFFERENTIAL DIAGNOSIS OF HYSTERIA AND INTRACRANIAL TUMORS.—DR. BYROM BRAMWELL writes as follows in the *Edinburgh Medical Journal* for May, 1887:

In dealing with cases of this description, it is essential to remember that the diagnosis of mere hysteria (nothing more than hysteria) is never justified unless the observer has, by the most careful examination, and by repeated observation, failed to detect any symptoms and signs indicative of organic disease.

The condition of the optic disks is, without doubt, the most important point in clearing up the diagnosis. If ophthalmoscopic examination shows the presence of double optic neuritis, the doubts and difficulties of the case are at once removed, for double optic neuritis is very rarely, if ever, associated with mere hysteria, but is very frequently, indeed generally, associated with cerebral tumors.

INTRAUTERINE DOUCHES OF SUBLIMATE.—DR. BERRY HART expressed the following views at a recent meeting of the Edinburgh Obstetrical Society:

It is of use to practise intrauterine douching where parametritis exists. When fixation of the uterus is present, it may not be due to sepsis, but may only be inflammatory. Dr. Hart mentioned a case where the uterus was fixed, and the patient was dying of septicæmia, but was saved by the use of corrosive sublimate. When the mischief is beyond the uterus, abdominal section should be performed, and intra-abdominal douching practised. Corrosive sublimate is as safe as chloroform, if properly used. No man has a right to use it as strong as 1: 1000 in the uterus. It was quite possible that in those fatal cases where a low strength had been used, that the kidneys had been previously affected. Dr. Stevens, in his observations on the urine of patients in the Maternity, had found that in nearly every case the urine contained some albumen. The question arose, Will douching with corrosive sublimate not set up kidney mischief in these cases?—*Edinburgh Medical Journal*, May, 1887.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JULY 2, 1887.

THE OPERATIVE TREATMENT OF INTESTINAL OBSTRUCTION.

AT the last Congress of the "Deutsche Gesellschaft für Chirurgie" the discussion upon the operative treatment of intestinal obstruction was introduced by PROF. MADELUNG, of Rostock, in an interesting paper, who restricted himself, however, to the consideration of acute internal strangulation of the bowel. He called attention to the fact that notwithstanding almost every medical periodical contains articles upon this subject, and that it has claimed the attention of all the large societies, still professional opinion is not at all unanimous in regard to the treatment of this condition, and that those who favor laparotomy do not concur as to the indications for the operation; nor have statistics brought about any essential results. In many cases the diagnosis is absolutely in the dark, and can only be determined after the abdomen has been opened, a fact which is painfully true in the experience of every one who has had to treat these troubles. On account of this uncertainty in regard to the diagnosis, we cannot classify cases according to anatomical forms previous to exploration of the abdominal cavity; hence laparotomy affords the only means of advancing our powers of diagnosis. We think every one must agree with these statements, which hold good especially for internal strangulations:

We believe that in the vast majority of cases it is absolutely impossible to reach a certain diagnosis except by opening the abdomen, and that when this has been done, anatomico-pathological conditions will often be found which would have negatived any other line of treatment.

The difficulties and dangers of laparotomy must not be underestimated; in some cases the procedure is simple enough, in others its successful performance will necessitate the exhibition of the highest degree of skill, and in others conditions may be found which no skill can overcome. Madelung gives as the prerequisites for the performance of laparotomy, a skilful operator, rigid antisepsis, and efficient assistance, and states that these qualifications are found only in a well-conducted hospital. When these conditions are not attainable, he recommends that a small incision be made, and an enterostomy performed, an operation which he is disposed to think preferable to laparotomy in many cases. He denies that the statement of Dieffenbach holds equally good in regard to laparotomy as it does with herniotomy, namely, "Every physician must be able to perform herniotomy in any case and in any place." We should be very sorry to accept these dicta as invariable rules of practice. In a thickly settled country like Germany it may be possible to find these qualifications in every case, but in sparsely settled localities they are not accessible, and still the patient should be given the chances which an operation would afford. We can hardly suppose that Ephraim McDowell possessed to any great degree any of these prerequisites when he, for the first time in the world's history, deliberately opened the abdomen for the removal of an ovarian tumor. Still one should be as far as possible prepared for the work by an appreciation of the dangers and difficulties, and by an acquaintance with the means of combating them.

In order to avoid the aspiration of fecal matter during the act of vomiting, whilst the patient is in a condition of narcosis, Madelung recommends the previous irrigation of the stomach, according to the method of Kussmaul.

Considerable space is devoted to the consideration of the question whether a large or small abdominal incision is preferable, and the pros and cons are impartially stated. The disadvantages of the large incision are the danger of the prolapse of the intestines, and the cooling of the peritoneum thereby. Nevertheless KÜMMEL advocates the free incisions, but MIKULICZ recommends a small incision, and seeks to discover the obstruction by the touch alone. Madelung favors an incision of sufficient size to allow the search to be made both by sight and touch, and in this we think he shows wisdom, as it is very difficult to differentiate the parts by touch alone. There is greater danger of sepsis, but this can be avoided by care.

When the distended intestines have escaped externally, it may be impossible to return them until their contents have been somewhat reduced, and this may be effected by puncturing with a fine trocar, but this is of but limited applicability. MR. J. GREIG

Smith, of England, makes the statement that distended coils should never be replaced until they have been relieved by incision and subsequent closure of the openin with sutures. These methods would seem to be too dangerous for routine practice, but in cases of extreme distention it is recommended to incise the bowel and allow its contents to escape. When the bowels are much distended Madelung protests against primary laparotomy, and proposes instead that the stomach should first be washed out, then a small abdominal incision made and a coil of intestine drawn out and fixed with two ligatures; the abdominal incision is then to be tamponed with iodoform gauze, and the bowel opened, the feces allowed to escape, and the intestinal incision sutured; the wound is then to be enlarged, and the cause of obstruction sought for.

In the abstract of this address which appears in the *Wiener med. Wochenschrift* of April 23d, no mention is made of distention of the bowels as a means of quickly reaching the seat of the disease, or of the reddening of the same. If, when we open the abdomen, the intestines are distended, and the distention constantly increases as we draw upon the coil, we may be sure that we are being conducted toward the constriction; but if the distention diminishes, we know we are going away from the constriction; the same holds good in regard to the discoloration from congestion; if it becomes deeper, we are advancing toward the constriction; if it becomes paler, we are receding from it. The seat of strangulation will be found in the right iliac region in a large number cases, hence it is proper to palpate the cæcum to see whether it is collapsed or distended. Sometimes it is necessary to resect a portion of the intestine, and one must judge by the strength of the patient whether it is better to reunite the cut ends immediately, or to form an artificial anus, and subsequently reunite the cut ends of the gut. Madelung was opposed to the immediate union of the bowel, which view coincides with that of some of the most prominent English surgeons.

As the leading principle in the operation, Madelung presents the following aphoristical statement: "The correction of every obstruction can only happen when the eye controls the hand and can accurately follow it. We ought not to operate in the dark." He further states that he is unable to share the hopes of some surgeons in regard to laparotomy, in spite of his unbounded faith in the progress of surgery, but he entertains the hope, however, that in a limited number of cases, by careful selection, stringent antisepsis, and great dexterity on the part of the operator, lives may be saved. Internal strangulations differ from external hernia in that the whole peritoneal cavity forms the hernial sac, and septic germs may wander from gangrenous places and lead to peritonitis, even after the obstruction has been relieved. "The question of the operative treatment of intestinal obstruction is still one of the darkest in the domain of surgery."

In the discussion which followed the reading of this paper, several of the most distinguished German surgeons took part. Rydygier, of Culm, said that the difficulty of locating the seat of the obstruction was frequently the reason why the operation was put off to the last moment, and then any ill result was sure to be ascribed to the procedure. The transient improvement following pumping out of the stomach also excites delusive hopes, and the opportune time for operating is lost. He begged physicians not to waste time with washing out the stomach, but to send the case early to a surgeon. He favored early operations, but was not partial to the formation of an artificial anus, since it leaves the constriction unrelieved, and gangrene is liable to occur.

Czerny's rules for the performance of laparotomy in these cases are that the patient shall be in a fair condition of strength, the belly soft, and the diagnosis moderately certain; in other cases he makes an artificial anus.

Credé, of Dresden, called attention to the fact that acute ileus was frequently preceded by chronic and severe pain in the belly, and he holds it to be proper to operate at this stage, in order to correct the cause of the colic at this early date. "We must not allow it to become ileus." In defence of this proposition, he related three cases upon which he had operated in the colic stage, where false ligaments were found, divided, and the patient cured. This is a bold proposition, and yet it is conceivable that prolonged pain may be an indication for operation.

Mikulicz, now of Königsberg, is inclined to recede from his earlier radical opinions in regard to the necessity of operation, since he has seen three cases recover under expectancy; he holds, however, that when the diagnosis of otherwise irremediable obstruction is made, the operation should be done. He mentioned the very important and very interesting experiments of Czibilski upon dogs, in which it was shown that only salicylic and boric acids could be used safely for irrigating the healthy peritoneal cavity, and that boric solution was not sufficiently effective, whilst sublimate solutions were especially dangerous.

M. Schede, of Hamburg, found but little satisfaction in the consideration of his own experience with laparotomy in acute intestinal obstruction, nor did the literature of the past ten years reassure him. The results are bad. The chief difficulty lies in the diagnosis. One not only cannot locate the seat and nature of the obstruction, but can never be sure that the constriction absolutely requires the knife.

When ileus is ushered in with acute symptoms, collapse, vomiting, and severe pain, laparotomy should be done; but if the collapse is too great, an artificial anus should be made.

From the remarks of those taking part in the discussion, it will be seen that no especially good result has accrued from the consideration of the subject at this time, as there was but little unanimity of opinion in regard to the matter; indeed, the speakers seemed to exhibit less enthusiasm than is common as to the future of the operative treatment of acute obstruction, and some of them actually foreshadowed a greater reliance upon internal treatment than has been fashionable of late. For our part, we believe that these patients should have twenty-four to forty-eight hours of judicious medical treatment, and if that fails, laparotomy ought to be performed at once; that we should not wait until the bowels become gangrenous, or the patient exhausted from suffering or peritonitis, but operate early.

BERGEON'S METHOD OF TREATING PHTHISIS.

On the solid groundwork of experience, as presented in the papers by Bruen, Shattuck, Pepper, and Griffith, which we publish in this issue, we can now obtain an idea of the merits of this treatment. In no instance does it appear to have been curative, as even in the three specially benefited in Bruen's series the local signs persisted. In a variable number of cases relief of certain symptoms has followed, and has possibly resulted from the use of the gas. In a considerable proportion the treatment has been without any influence. Plainly, this method, if applicable at all, does not suit all cases, but we fail to see in the reports any indications as to which cases are likely to be benefited.

The trial, however, has scarcely been a fair one, for all grades and all forms of the disease have been treated in the same way, and we have repeatedly seen patients use the gas whose lungs were honeycombed throughout, and long past any hope of repair. We would urge a further trial in, say, twenty carefully selected cases of incipient phthisis, with the disease limited to an apex, but with signs of undoubted softening, and of bacilli. Such a group could be readily obtained in the wards of the Philadelphia Hospital, and would, if followed for six months, properly test the value of the plan.

Recently, at the Societé Anatomique de Paris, Cornil and Bergeon presented the results of an interesting experiment. Six rabbits were submitted for twenty minutes at a time, during five days, July 23 to 31, 1886, to an atmosphere charged with powdered tubercular sputum. Two died, at Paris, of broncho-pneumonia within ten days. A third was kept at Lyons, and died on the 7th of August, with fever and rapid emaciation. The lung showed one small excavation. No mention is made of any tubercles. The other three were given injections of gas three times a day for thirteen days. As the animals seemed so well, the treatment was not continued. One was killed on the 16th of October, and presented caseous nodules in the lungs, in which bacilli were found. The second one was killed at the end of December, and also showed caseous nodules, and a few tubercles, but not so many as in the first animal. The third was killed on April 27, 1887, and presented a few semi-calcified tubercles. These animals had grown and thrived, and appeared in perfect health. It is claimed that the medication arrested the course of an acute pulmonary disease, since, as a rule, rabbits exposed in an atmosphere containing tuberculous sputa die within two months.

The confirmation of these results would justify a further trial of the enemata in the early stages of the disease, in which alone we may expect benefit.

GENERAL PARALYSIS AND MENSTRUAL DISORDER.

Some years ago Berthier published an interesting monograph, *Des Neuroses Menstruelles*, in which 242 cases of these neuroses were presented, 4 of them being instances of general paralysis following amenorrhœa, in one of which the suppression occurred normally and recently. More recently Petit, in the *Archives de Tocologie* of April 30th, concludes, from the study of fifty-nine cases of general paralysis in women, that there is an intimate relation between this disease and disordered menstruation. He believes that the development of general paralysis in women most frequently causes these disorders. They are characterized in some cases by a sudden and final arrest of the menses, and in others by a remarkable irregularity of the periods which had hitherto been normal. In the cases from which he draws these conclusions, menstruation was normal in only seven, and disordered in fifty-two.

In the light of such facts, it still seems doubtful if menstrual disorder should in all cases be attributed to the disease. Probably the most frequent cause of general paralysis, syphilis, is in the great majority of cases also the cause of the following, or of the preceding amenorrhœa. Seventy-five per cent. of cases of general paralysis can be attributed to syphilis, and whenever this disease becomes grave, menstruation is very liable to be disordered, the flow usually being retarded at first, then becoming scantier, and, finally, a protracted or permanent amenorrhœa succeeds. We believe, therefore, that so far as the majority of cases is concerned, in syphilis, rather than in general paralysis, is to be found the explanation of the amenorrhœa so commonly observed in the latter disease.

THE TREATMENT OF SUPERFICIAL NEURALGIAS BY "KATAPHORESIS."

AT the Sixth Congress for Internal Medicine held recently at Wiesbaden, ADAMKIEWICZ, of Krakau, called attention to this method of treating pain occurring in superficial nerve trunks. It consists in the application of chloroform to the affected area, over which in turn is placed a diffusion electrode connected with the positive pole of a constant battery. The circuit is now completed, and the current kept up for two minutes, then gradually decreased until no current passes. Under these circumstances the chloroform passes through the skin by what Adamkiewicz sees fit to call "kataphoresis," and palsies the nerve trunk without producing any inflammation or sloughing of the part. He thinks that this was a measure not only temporary in its benefits, but permanent, and that while a single application was sufficient to relieve any given attack, that three or four applications, one for each period of suffering, generally effected a permanent cure. He also calls attention to what we already know, that such a procedure is necessarily limited to those cases in which the affected nerve is not deeply situated.

The Times of last Saturday says: "The issue of THE MEDICAL NEWS of this date completes the fiftieth volume of that excellent journal. This indicates a quarter century's existence, although it is but a few years since THE NEWS assumed its present form, in which it at once took rank among the ablest and best of the medical periodicals of the country—perhaps the very best of them all, considered as a medical newspaper, that is always abreast of the leading professional topics of the hour."

While fully appreciating this kindly mention by our contemporary, we may be permitted to correct a pardonable error as to our age, into which it was led by inferring that two volumes have been published each year in the past, as at present. THE MEDICAL NEWS was begun in 1843 as a monthly periodical, and the twelve monthly numbers constituted an annual volume up to 1882, when the weekly issue was substituted for the monthly, with two volumes for the year, so that, in fact, THE NEWS is now in its forty-fifth year of publication, and is the third oldest of the American medical periodicals now in existence, *The American Journal of the Medical Sciences* and *The Boston Medical and Surgical Journal* only antedating it.

THE measure, known as the New York County Medical Society bill, has become a law by the Governor's signature. It is ostensibly a bill to codify the bewildering multitude of medical laws that have been piled one upon another since 1806; it is virtually a compromise measure, acceptable to eclectics and homœopaths, as well as the above-named society; and it is, in reality, aimed to crush out clairvoyants and very ignorant quacks.

THE following is an extract from a letter written by Dr. Abraham Jacobi to the Health Board of New York City. It conveys a sharp reminder to physicians and others who are negligent in regard to thorough fumigations after the termination of cases of diphtheria and allied zymotic affections:

"Ann Donnelly is a cook. She was in the house of Lieut. Reed, West Point. She went to New York to bury a child of hers who died of diphtheria at the house of a Mrs. McKee, No. 327 West Forty-third Street, about May 20. About ten or twelve days ago she unpacked a trunk in Lieut. Reed's house in the presence of his children. The boy is recovering from diphtheria; the girl, of five years, died day before yesterday. The cook has disappeared from the house, trunk and all, ready to unpack again somewhere else and go on murdering. If that woman cannot be sent to the State prison for sowing death wherever she goes, can she not be hunted up and stopped from doing mischief?"

There are some who will not be so severe upon Ann, but will be inclined to throw the blame upon the doctor, if there was one, in charge of the first case referred to in the letter.

THE *British Medical Journal* of to-day will state that Dr. Morell Mackenzie has removed almost all of the fungous growth that remained in the throat of the Crown Prince when he left home.

Since the last operation was performed the Prince has caught a somewhat severe cold, the result of which is that his pharynx and larynx are both acutely congested, the parts in the vicinity of the growth being less affected than the others. The local swelling has caused some difficulty in swallowing, but it is hoped that this will soon disappear. The case at present requires the greatest care and will require it for several weeks. In the meantime surgical operations on the Prince's throat will be suspended. The Prince's cold does not worry Dr. Mackenzie.

In another column we give the full text of the report of Prof. Virchow on the microscopical appearances of the growth removed by Dr. Morell Mackenzie at the second operation at Berlin.

DR. EDWARD H. DUGGAN, of Brooklyn, N. Y., lost his life, June 24th, at the hands of an assassin, while engaged upon his daily round of professional calls. He was shot without warning, and without a chance of defence, by a man who had shaken him by the hand while he held in readiness, behind his back, the loaded, murderous weapon. The murderer is reported as a worthless young man, given to drink, and who at one time kept a liquor saloon; he claims to have "a defence" for his act, the nature of which he will not disclose until he shall

be put upon trial. But the soundness of this claim is not generally credited. Dr. Duggan, the dead physician, was in his fiftieth year, in the prime of his activity, and at the height of a well sustained practice. He was a graduate of the Long Island College Hospital, in 1861, and a member of the regular society and dispensary organizations of his section. His murderer has been indicted, and will be speedily brought to trial.

REVIEWS.

NERVOUS DISEASES AND THEIR DIAGNOSIS. A TREATISE UPON THE PHENOMENA PRODUCED BY DISEASES OF THE NERVOUS SYSTEM, WITH ESPECIAL REFERENCE TO THE RECOGNITION OF THEIR CAUSES. By H. C. WOOD, M.D., LL.D. J. B. Lippincott Co., 1887.

A special work on diagnosis is always indicative of an advance in literature, and this book of Dr. Wood's on "Nervous Diseases and their Diagnosis," is a very decided evidence of the activity in this department of medicine. In the introductory chapter, Dr. Wood details the method by which he proposes to study the diseases under consideration, "Hitherto the authors of text-books have travelled from the lesion to the symptoms." In this work the method of study is reversed, and the investigation is carried from the symptoms to the lesion; a very practical change, making the subject much more clear to the general reader.

The symptoms of neurasthenia or nervous weakness are considered so indefinite and fugitive that the subject is tersely discussed in the introduction. This condition is, however, thought to be the "habitual foundation for chorea, hysteria, insanity, and various nervous diseases, but may exist without the superaddition of any of them." The diagnostic symptomatology of nervous diseases is considered in eleven chapters, the last one being devoted to disorders of intellection, in which insanity is fully considered.

It is impossible in a short review to go over the very valuable matter contained in this work, but it goes without saying that Dr. Wood's book should be in the library of every specialist, if not in the hands of every well-informed general practitioner. The only portion of the work which seems deficient is the description and consideration of multiple neuritis, which has now, from increased frequency, become a most important disease to diagnosticate properly. The fact that the German Government has sent out a special commission to investigate the causes, duration, and progress of beri-beri in the East, shows the importance and prominence given to the study of this disease in Europe.

Chapter VII., on exaltation of sensibility, is particularly full and interesting. Under this division the diagnosis of headache is given the most careful consideration, and as the successful treatment of this most prevalent and obstinate disorder depends entirely on a correct diagnosis, this portion of the work will prove valuable to any practitioner.

Dr. Wood has added a very important work to American medical literature, a book which shows progress in the most difficult branch of the profession, and of which he may justly feel a pride in being the author.

SOCIETY PROCEEDINGS.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

Second Annual Meeting, held at Washington, June 2 and 3, 1887.

(Concluded from page 695.)

FRIDAY, JUNE 3D.—MORNING SESSION.

DR. E. T. BRUEN, of Philadelphia, read a paper on BERGEON'S METHOD OF TREATING PHTHISIS.

(See page 2.)

DR. F. C. SHATTUCK, of Boston, then read some CLINICAL NOTES ON BERGEON'S METHOD OF TREATING PHTHISIS.

(See page 7.)

DR. WILLIAM PEPPER followed in a paper on the same subject.

(See page 10.)

DR. H. C. WOOD, after studying the cases treated by this method, came to the conclusion that it was of a certain amount of benefit. The method of employing the gas presents many objections. The sulphuretted hydrogen should accomplish the same results when absorbed by the stomach as when taken up by the large intestine. He had therefore administered the sulphuretted hydrogen gas in carbonic acid water. Water at the ordinary temperature takes up two or three times its volume of sulphuretted hydrogen. This he considered a distinct addition to pulmonary therapeutics. He called attention to the fact that this is not a new method. In connection with many of the sulphur springs of Europe, there are chambers fitted up where pulmonary catarrh can be treated by inhalation of the gas.

DR. BEVERLY ROBINSON, of New York, considered this to be a valuable adjunct to our methods of treatment. The pain which is experienced in many cases may be due to the fact that there are ulcerations in the intestine. These may be present without the existence of diarrhœa. He had now under treatment a case in which tubercular deposits in the lungs are associated with ulceration of the larynx. He thought that this would be a good case in which to observe the influence of the gas on the local condition. The man has received a daily injection for the past ten days. There has not been the slightest change in the appearance of the larynx.

DR. F. FORCHHEIMER had performed the following experiments. He had treated two or three patients in the way recommended for some time. Then he had substituted for the sulphur solution plain water, and continued the injections for a time. He had also given the carbonic acid gas by injection; and, lastly, he had for two weeks treated these cases with the injection of air, using the Bergeon apparatus. The patients in these experiments did not know that any change had been made in the gas employed. So far as he had been able to judge, the patients treated with air did about as well as those treated with sulphuretted hydrogen. It is clear that the introduction of air is not the cause of the pain in the Bergeon method.

DR. J. T. WHITTAKER had used the sulphuretted hydrogen gas both by injection and also by inhalation.

The effects under both methods of administration seem to be the same. It mitigates the cough, relieves the fever, and lessens the night-sweats. It, however, is not a specific.

DR. F. P. KINNICUTT, of New York, read a paper on

ATROPHY OF THE GASTRIC TUBULES: ITS RELATION TO PERNICIOUS ANÆMIA.

He gave the histories of two cases in which the typical symptoms of pernicious anæmia were well marked. At the autopsy in each of these cases nothing special was found in any organ but the stomach. The inner surface of the organ was smooth. Microscopical examination was made of numerous sections removed from different parts of the stomach. Throughout a large extent no trace of gastric tubules was found. In some parts the more superficial portions of the tubules could be found, but the deeper portions could nowhere be made out. There was also seen a peculiar hyaline substance in the shape of tubes and of drops. Numerous irregular cells were seen near the surface of the mucosa. He thought that in this lesion of the stomach is to be found the explanation of a certain number of cases of pernicious anæmia.

DR. FRANCIS DELAFIELD, of New York, said that in these cases of pernicious anæmia it is natural to look for some influence which would affect the general nutrition. In a number of cases marked changes in the mucous membrane of the stomach have been found. The main question is, whether the lesion of the stomach is to be looked upon as a cause or as the result of the pernicious anæmia. He considered the lesion of the stomach as secondary and not primary. If we attribute the anæmic condition to the lesion of the stomach, the condition must be due to a form of starvation; but in many other diseases leading to starvation we do not find the symptoms of pernicious anæmia.

DR. F. P. HENRY, of Philadelphia, said that the cases reported, in connection with other cases which have been recorded, demonstrate that there is a form of anæmia associated with, and dependent upon, atrophy of the gastric tubules. That this condition is primary, and not secondary, is sufficiently attested by the fact that it is not found in any other condition. Such an extreme degree of atrophy had not, so far as he was aware, been found in any other condition. In the case reported by Dr. Osler and himself, there was complete absence of the peptic glands. It is impossible that any form of gastric digestion could be accomplished.

DR. OSLER remarked that there is unquestionably a group of cases of pernicious anæmia in which there are serious lesions of the gastric mucous membrane, although these lesions are not always the same. It is quite impossible to distinguish clinically the cases with gastric atrophy from the cases without these lesions. In a case of two years' standing, although the symptoms were marked, the autopsy revealed no serious lesion of the stomach.

AFTERNOON SESSION.

DR. E. C. SEGUIN, of New York, made

A THIRD CONTRIBUTION TO THE STUDY OF LOCALIZED CEREBRAL LESIONS.

The first case reported related to the location of the facial centre. The patient, a boy of seven years, was first seen in January, 1885. He had been complaining of numbness in the right hand. The right leg and arm were slightly paretic. There was no headache and no aphasia. Shortly after this, clonic convulsive movements occurred in the right cheek, and both eyeballs were turned to the right. This lasted for over two hours. At times the speech was thick. There was no history of serious injury, and there was no evidence of pulmonary, renal, or arterial disease. There was no cranial tenderness on pressure. The tongue, when protruded, deviated to the right. The diagnosis was meningeal adhesion over the precentral region. Iodide of potassium was given in gradually increasing doses until from sixty to seventy-five grains were taken. Early in April of the following year, symptoms of tubercular meningitis developed, and the child died after an illness of three weeks. At the autopsy, the ordinary lesions of tubercular meningitis were found. In addition, there was a patch of adhesion situated over the left precentral gyrus and the caudal part of the second frontal gyrus. This was one inch in diameter. This would indicate that in the human brain the facial centre is in the caudal end of the second frontal convolution.

The second case related to the situation of the leg centre. A patient, aged forty-nine years, suffered with paresis of the right leg and clonic spasm of the right abdominal muscles. There were right hemi-epileptic attacks, the spasm beginning in the abdominal muscles and extending to the arm and leg. These attacks were repeated without loss of consciousness. Paralysis of the right leg and paresis of the right arm developed. There was no aphasia and no choked disk. Attacks of a syncopal character occurred, in one of which the patient died. At the autopsy a large sarcomatous tumor was found involving the cortex of the paracentral region gyrus. Two small nodules were found in the white substance below the principal tumor. This would indicate that the nerve centre for the leg was in the paracentral lobule.

DR. JAMES J. PUTNAM, of Boston, reported a case recently under his care. A man of forty-five, suffering with locomotor ataxia probably of syphilitic origin, suddenly developed convulsions of the right arm and leg, without loss of consciousness and without change in the voice. The symptoms relating to the arm entirely passed away, but the leg never recovered its normal condition. The patient died some time later, and at the autopsy a small hemorrhage was found at the lower edge of the paracentral lobule.

DR. F. T. MILES, of Baltimore, reported the case of a patient suffering with Bright's disease, who suddenly became hemiplegic without the voice being affected. The arm and leg were affected. He rapidly improved, but the leg remained weak. He complained a great deal of a dragging in the shoulder. At the autopsy the only lesion that could be found was a hemorrhage of the size of a bean in the paracentral lobule.

DR. H. M. LYMAN said that some months ago he saw a case in which there was a sudden convulsion without loss of consciousness, the left arm being principally affected. These convusions were repeated. There was a paretic condition of the left arm, which in a few days extended so as to involve the corresponding leg. The convulsive movements of the upper extremity continued to recur. They did not involve the face. The patient

died, and a sarcoma was found on the right side occupying the position of the centres for the arm and leg.

DR. J. J. PUTNAM, of Boston, then read a paper on

THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE; AND ON THE SYMPTOMATOLOGY OF CHRONIC LEAD POISONING.

He reported analyses of eighty-six cases in which the urine had been examined for lead, although no unequivocal signs of lead poisoning were present. The cases were divided into the following groups:

	No of cases.	Lead present.	Lead absent.
1. Number of symptoms not attributable to other causes	11	2	9
2. Neurasthenia and simple mental depression	9	5	4
3. Fine muscular tremor—nervous debility	9	9	0
4. Multiple neuritis—neuritis with chronic myelitis. Spastic paraplegia—multiple sclerosis	19	15	4
5. Locomotor ataxia	3	0	3
6. Progressive muscular atrophy	4	0	4
7. Acute poliomyelitis of the adult	1	0	1
8. Cerebral and cerebrospinal cases	7	6	1
9. Epilepsy	8	3	5
10. Sciatica	2	0	2
11. Vague neuralgias of long standing	4	4	0
12. Profound anæmia	3	1	2
13. Unclassified	6	3	3

The number of cases in these groups is too small to be of statistical value, but may help in the further analysis of the cases and as a basis for further research. Of the 86 cases of which the urine was examined, lead was found in 48, and was absent in 38, and there is good reason for believing that the number of cases in which it was found in the urine does not fully represent the whole number in which it was present in the body.

If from the 48 cases in which lead was found we subtract those in which the patients were known to have been strongly exposed by their occupation, or otherwise we have left 32 to be contrasted with 38 as approximately representing the ordinary exposure of the community.

It is to be remembered, however, that the patients were drawn mainly from the poorer classes of the community, and that some of them came from country towns or villages where the practice of pumping drinking water through lead pipes from a distant well, the end of the pipe resting in the well, is still very common. All such cases that were known were, however, excluded. Taking the evidence furnished by the cases themselves, and seeking to indorse it by testimony drawn from the literature of the subject and by the effects of treatment, we arrive at the following conclusions, which are, of course, only to be regarded as provisional:

1. It is probable that lead may cause neurasthenic symptoms which may exist for a long time without other signs of poisoning.

2. The same is true of fine muscular tremor, especially if associated with debility.

3. The most important conclusion is, lead seems to cause occasionally a greater or less degree of the symptoms classed as spastic paraplegia instead of the usual type of paralysis with atrophy and loss of the deep reflexes.

4. Additional evidence is furnished of the importance of suspecting lead as a cause of vague cerebral symptoms, such as are often due to syphilis.

5. In one case of epilepsy, in a person not predisposed, and where the probable first attack occurred at the age of twenty-five, besides the discovery of lead in the urine, there was a slight weakness and impairment of electrical reaction of the long extensors of the fingers.

Two cases of ataxia with extensive muscular atrophy and other signs of peripheral neuritis were reported, probably due to lead.

DR. I. E. ATKINSON, of Baltimore, read a paper on

THE FORMS OF TYPHOID FEVER SIMULATING REMITTENT MALARIAL FEVER,

which will appear in full in THE MEDICAL NEWS.

DR. WILLIAM H. DRAPER, of New York, considered that many cases diagnosticated as typho-malarial fever were cases of typhoid fever. He thought that the diagnosis of typhoid fever could be usually made in the course of the first week of the disease by attention to the characteristic course of the fever. The nervous symptoms of typhoid fever are of great importance in the diagnosis. In considering a disease like this we should study it in its totality and not in its elementary parts.

The author has spoken of the aid given by quinine in the diagnosis. His own experience confirmed that of others with reference to the use of quinine as an antipyretic in typhoid fever. Unless used in such doses as to produce a certain degree of collapse it is useless. He believes that it did nothing more than to increase the discomfort of the patient. If in five or six days the use of quinine does not succeed in checking the fever, we may conclude that we are dealing with a continued fever of the nature of typhoid.

DR. W. GUITÉRAS had come to a conclusion different from that expressed by the author. These cases present no symptom of typhoid fever with the exception of the continued fever, and this is a strong argument against their being typhoid. These cases are so numerous, as we go further South, that he would class them as a separate disease. He had examined some of these cases of prolonged continued fever of Southern countries post-mortem, and had failed to find the lesions of typhoid fever. At the South there are three diseases—malarial remittent fever at one end, typhoid fever at the other, and between these, cases of the kind described by Dr. Atkinson. His view of this fever is that it belongs to the class of functional fevers. A simple continued fever may be set up by an excessive demand made upon any of the important functions of the body. He had thought that in warm climates, where constant exertion was required on the part of the heat-centres to keep within limits the production of heat, a paralytic condition of these centres might be induced, especially toward the close of a long and hot summer. For this he suggested the name of continued thermic fever. This fever presents none of the symptoms of a malarial affection and is quite common in sections where malaria is unknown.

DR. A. JACOBI, of New York, thought it a mistake to say that those cases in which the fever cannot be broken in five or six days by quinine are not malarial. There are cases of remittent fever that will not be broken by quinine. There is one assistance in diagnosis which he had not heard alluded to, and that was the diazon test

for typhoid fever to me. This has frequently been of much service to him. It is prepared as follows:

Solution No. 1. Sodium nitrate one part, water two hundred parts.

Solution No. 2. Sulfanilin acid five parts, concentrated muriatic acid fifty parts, water one thousand parts.

Add one and one-fifth parts of the first solution to fifty parts of the second.

Equal parts of this mixture and the urine are to be mixed. Then add about sixty or seventy per cent. of aqua ammonia. In normal urine there will be only a slight discoloration, while in urine from typhoid fever there will be a deep purple discoloration. This test is rarely applicable during the first two or three days. It generally can be applied up to the fifteenth or eighteenth day. It should also be stated that in cases of acute miliary tuberculosis the same reaction is obtained.

DR. W. W. JOHNSTON, of Washington, said that it is well known that in places where malaria has largely prevailed, as drainage has improved malarial affections have diminished, and typhoid fever has increased. This has been the case in Washington. It has also been observed in London. The cases of typhoid fever which he had observed may be arranged into three groups: those in which all the symptoms have been present; those in which only one has been present; and those in which all the symptoms, with the exception of the fever, have been absent. He saw no reason clinically for saying that those cases which present the typical temperature of typhoid fever are not cases of this disease.

DR. R. H. FITZ said that a non-epidemic, of an anomalous form of fever, recently occurred in Boston among a number of emigrants. The diagnosis lay between typhoid and typhus fever. It was concluded that they were cases of typhoid fever. One case ended fatally. The intestinal lesions were of the most trivial character; the enlargement of Peyer's patches was no greater than is seen in many cases of enteritis. The lesions were so superficial that it seemed quite probable that they would have disappeared if the case had lived a few days longer.

DR. I. T. DANA stated that some of the cases to which Dr. Fitz had referred found their way to Portland, and one of them died there. The autopsy in this case showed well-defined but incomplete lesions of typhoid fever. He believed that this is what will generally be found, that the atypical cases will present lesions as imperfectly developed as the other symptoms.

DR. W. T. COUNCILMAN, of Baltimore, thought that a simple examination of the blood will enable us to differentiate between the continued malarial fevers and typhoid fever. The organisms found in these cases of continued malarial fevers are very easy to recognize. They are large, crescentic forms, free in the blood, and not contained in the corpuscles. They do not require a high power for their detection.

DR. W. OSLER agreed with the last speaker, that we have in the microscopical examination of the blood a positive means of diagnosis. He believed that in a doubtful case a careful examination of the blood would determine whether it was malarial or not, while a careful examination by culture methods will determine whether or not it is a case of typhoid fever.

He reported three instances in which the examination of the blood aided in the diagnosis. One was a case of continued malarial fever, thought to be typhoid; another was a case of remittent fever, supposed to be typhoid. In both these instances, examination of the blood showed the case to be malarial. In the third instance, the patient had a chill, which was repeated. It was supposed to be a case of remittent fever, but the malarial organisms were not found. The case pursued an atypical course, and when two weeks advanced in convalescence, had a well-marked relapse of typhoid fever.

EXECUTIVE SESSION.

The report of the Committee on the

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

was received and adopted, and Dr. William Pepper, of Philadelphia (with Dr. Reginald H. Fitz, of Boston, as alternate), was appointed as the representative of this Association.

OFFICERS FOR THE ENSUING YEAR:

President.—Dr. William H. Draper, of New York.

Vice-Presidents.—Dr. Francis Minot, of Boston, and Dr. J. Palmer Howard, of Montreal.

Recorder.—Dr. William Osler, of Philadelphia.

Secretary.—Dr. Henry Hun, of Albany.

Treasurer.—Dr. W. W. Johnston, of Washington.

The following were elected to *Active Membership:*

Drs. A. V. Meigs, Louis Starr, and J. H. Musser, of Philadelphia; Dr. James E. Reeves, of Wheeling, West Va.; Dr. William H. Whitney, of Boston; Dr. James Stewart, of Montreal; and Dr. N. Allen Starr, of New York.

Dr. John S. Billings, of Washington, was elected to *Honorary Membership.*

Adjourned.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Fourth Annual Meeting, held at Baltimore, May 31 and June 1, 1887.

(Concluded from page 697.)

WEDNESDAY, JUNE 1ST—MORNING SESSION.

DR. A. Y. P. GARNETT, of Washington, presented some

OBSERVATIONS UPON THE SANITARY ADVANTAGES OF TIDEWATER, VA., INCLUDING VIRGINIA BEACH, AS A WINTER HEALTH RESORT.

He stated that while no official records of the causes of death in this locality have been kept, the traditions of the inhabitants during the past hundred years, and the observation of intelligent practitioners practising in this region, go to show that consumption is very rare. In other respects this locality is remarkably healthy. The average number of deaths per thousand, from all causes, during the past six years, has been 10.66. The average death-rate in other sections of the State is twelve per thousand. He was disposed to attribute some of the benefits which this locality presents to the proximity of the Great Dismal Swamp, which has an area of three hundred square miles, covered with cypress and evergreen trees. The atmosphere is remarkably dry. The average temperature during the winter months is considerably higher than at other places along the coast.

DR. A. L. LOOMIS, of New York, then read a paper on

EVERGREEN FORESTS AS A THERAPEUTIC AGENT IN PULMONARY PHTHISIS.

It has long been known that similar climates as determined by geographical and meteorological conditions have different therapeutic effects. That there is some relation between the development of organisms and atmospheric conditions, is becoming more and more apparent. We know that cold and high altitudes render the air aseptic, but the degree of cold and the height required, is so great that clinically it is not possible to derive much advantage from this fact. The effect of a purely aseptic air upon ulcerative processes, is not so great as the effect of an atmosphere which is aseptic on account of the presence of antiseptic agents. The belief in the good effect of pine forests in cases of phthisis is quite unanimous, and the author thought that the clinical evidence in favor of their beneficial influence in these cases was unquestioned. The atmosphere in such regions is not only aseptic, but also antiseptic. Such an atmosphere contains considerable turpentine vapor, and we should, therefore, expect it to contain a certain amount of peroxide of hydrogen. It was his opinion that the majority of cases of phthisis die, not directly from the lesions in the lung, but from the secondary septicæmia and pyæmia which are set up. It is impossible to apply to the ulcerations within the lung the antiseptic washing and dressing that is employed in external lesions, but if an antiseptic atmosphere can be obtained we may hope to counteract the secondary poisoning. Such an atmosphere will not destroy the bacilli, but it will accomplish much in the way of arresting the suppurative process. In his opinion, the atmosphere in the region of evergreen forests acts in a manner similar to the antiseptic agents which are successfully used to arrest suppurative processes in other portions of the body, and he thought that in all probability the active agent was the peroxide of hydrogen resulting from the oxidation of the turpentine vapor. While it is not possible for every one suffering with pulmonary phthisis to go to an antiseptic atmosphere, yet it is possible to render the air of any particular locality antiseptic.

DR. S. S. COHEN said that the paper confirmed certain impressions which he had formed from an experience with methods of making an artificial climate. He had had excellent results in the way of alleviation of symptoms in phthisis by the inhalation of terebinthinate substances, especially where this has been associated with the inhalation of peroxide of hydrogen or oxygen. Under these inhalations he had seen laryngeal ulcers cicatrize, especially if they have been previously washed with the solution of peroxide of hydrogen.

DR. E. L. TRUDEAU, of Saranac Lake, then read a paper on

ENVIRONMENT IN ITS RELATION TO THE PROGRESS OF BACTERIAL INVASION OF TUBERCULOSIS,

which appears in full in the July issue of the *American Journal of the Medical Sciences.*

AFTERNOON SESSION.

DR. F. F. SMITH, of St. Augustine, read a paper on

ST. AUGUSTINE AS A WINTER HEALTH RESORT.

He described the geographical and climatic conditions existing in St. Augustine. An abundance of pure water is obtained from sixty artesian wells. This water is charged with sulphuretted hydrogen. Drinking water is obtained by means of cisterns. A complete system of sewers is now being introduced; these will be flushed by the waste water from the artesian wells. The average temperature during the winter months of the past ten years has been as follows: November, 63°; December, 57°; January, 55°; February, 58°; March, 61°; and April, 67°. The average number of rainy days during the winter months for the past ten years, has been thirty-three, but on nineteen of those occasions the rainfall was at night, so that there were really only fourteen rainy days.

The report of the Committee on

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS,

was received and adopted. Dr. A. L. Loomis, of New York (with Dr. F. Donaldson, Sr., of Baltimore, as alternate), was appointed as the representative of the Association to the Committee on the Organization of the Congress.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President.—A. L. Loomis, M.D., of New York.

Vice-Presidents.—A. Y. P. Garnett, M.D., of Washington, and James T. Whittaker, M.D., of Cincinnati.

Secretary and Treasurer.—James B. Walker, M.D., of Philadelphia.

Councillors.—Drs. E. T. Bruen, of Philadelphia; J. H. Tyndale, of New York; F. H. Bosworth, of New York; F. C. Shattuck, of Boston; and R. G. Curtin, of Philadelphia.

The Association then adjourned.

CORRESPONDENCE.

LETTER FROM FLORENCE.

A Visit to the Maternity—Obstetrical and Gynecological Statistics — Laparotomy—Cæsarean Section — Wax Preparations.

I was very kindly received here by Prof. Chiara, and went through the wards of the Maternity with him. The building is antiquated in appearance, closely surrounded by other buildings, but everything inside seemed to be cleanly and in good condition. The institution has eighty beds for both gynecological and obstetrical cases, no separation of them being made. The upper floor is devoted to unmarried pregnant women, and here midwives are instructed. I saw about twenty-five cases in this ward. On the lower floor are the married cases, and these are attended by the students. I am informed that all bad cases in the city, among the lower classes, are sent to the hospital, and some of them are in very bad condition when admitted, from delay or want of attention. The spray is used during the process of parturition, and after delivery a douche of corrosive sublimate is used and the patient removed to the lying-in ward. The obstetrical record for the current year, up to date, shows 215 cases, among which were 1 case of eclampsia, 4 cases of placenta prævia, 1 Cæsarean section, 18 forceps cases, 3 of them applications at the

superior strait, and 1 perineorrhaphy. The mortality during this time has been 5, 2 from infectious diseases, 2 from ordinary diseases, and 1 "accident," which means, I believe, hemorrhage. Possibly the statistics for the year 1886 may be of sufficient interest to present:

	No. cases.
Interruption of gestation:	
obstetrical	7
medical	11
Eclampsia	6
Placenta praevia	3
Version	11
Forceps:	
superior strait	15
excavation	29
inferior strait	23
Craniotomy	6
Rupture of uterus	1
Cæsarean section	4
post-mortem	1
Artificial removal of secundines	2
Perineorrhaphy	3
Abortion:	
natural	50
artificial	4
Premature births:	
natural	16
artificial	21
Births at term:	
natural	302
artificial	69
Deaths:	
from infectious disease commencing in hospital	6
admitted with infectious disease	4
ordinary diseases	8
accident	2
Total	14
Twins	5
Quintuplets	1

The admissions to the gynecological department during the year amounted to 430 cases. The following were some of the operations performed:

	No. cases.
Laparotomy	19
for diagnosis	4
Hysterectomy	3
Amputation of cervix	7
Removal of polypi	6

Laceration of the cervix is not recognized at all, and of course the operation for it is never performed. This was told me by Dr. Freeman, of Philadelphia, who is at present studying here, and to whom I am indebted for information.

I witnessed an ovariotomy by Prof. Chiara. The tumor was not large and there were no adhesions of consequence. Both ovaries were removed, the second being found to be affected with cystic disease. The operation was conducted under the spray—three apparatus being in operation in different parts of the room. The pedicles were ligated and then divided with the thermo-cautery. The edges of the wound were sponged with a solution of permanganate of potash, dusted with iodoform, and the wound closed by stitches passed through all the tissues of the abdominal wall. Antiseptic gauze and cotton were laid over the abdomen, above these a pad made by quilting shot between layers of stuff, and over all a bandage.

In seeing in the wards a number of cases convalescent after laparotomy, I had noted extreme scar-marks made by the sutures, which I naturally felt inclined to attribute to septic processes. I am now, however, inclined to attribute them to the large size of the needle and sutures used for closing the abdominal wound. Both were much larger than I have ever seen made use of elsewhere.

Italy presents a fine field for the Cæsarean operation, as is apparent immediately to a medical observer as he passes along the streets. Prof. Chiara has had ten cases, five of them at Milan and five here. Two were by the Sänger method, both successful; eight were Porro operations, with two deaths. Dr. Fasola, the assistant at the Maternity, has had one Porro operation—successful.

I left home with the impression that in Italy ether was nearly the only anæsthetic used. Thus far I have found chloroform alone used, but then my observation has been but limited. In the Maternity here chloroform only is used. No accident has occurred under Prof. Chiara's observation; dangerous symptoms occurred twice. Sometimes, but not always, a hypodermatic injection of atropia and morphia is given before such operations as ovariotomy.

No medical man should visit Florence without seeing the anatomical wax preparations, which are of world-wide celebrity and deserve all the encomiums which have been given them. I had considerable difficulty in finding them. They are now in the Museum of Natural History, where they occupy eleven rooms. The bones and ligaments are first presented, then the other systems and special organs, closing with the brain and nervous system. The latter are especially fine, and are surpassed in excellence only, if at all, by the series of preparations showing the genital organs and gestation through all its periods, as well normal as extrauterine. The wax preparations of Tummo representing bodies in decomposition after the plague, of which considerable is said in the guide-books, are not, in my judgment, worth going to see. They are disgusting—the others have an artistic merit besides their anatomical accuracy to make them attractive. These are in the National Museum, in quite another quarter of the city from the others. R.

FLORENCE, May 24, 1887

NEWS ITEMS.

THE ILLNESS OF THE CROWN PRINCE.—The *British Medical Journal* of June 18, 1887, reports the condition of the Crown Prince as follows:

We are able to state that the progress of the clinical features of the case of the Crown Prince thus far confirms, in Dr. Mackenzie's opinion, the favorable deductions which may be made from the report of Professor Virchow which we have received by telegram from Berlin. The delay in the issue of this important document is due to the fact that precedent was opposed to its publication, and that only serious public considerations and some pressure in high quarters in Berlin have overcome this obstacle. The responsibility of the pathological statement rests with the eminent Berlin professor, than whom there is no higher authority. From the clinical point of view, Dr. Mackenzie is of opinion that

the growth has not at all the aspect of malignancy. It has the granular, slightly cauliflower like appearance of an ordinary papilloma, without any sign of infiltration of the surrounding tissues, and at present there is scarcely even a trace of congestion around the base. There was, of course, a good deal of local swelling after the first operation, but in the interval between Dr. Mackenzie's two visits to Berlin, we understand that this completely subsided under the influence of rest and insufflations of astringent powders. The growth occupies about the posterior fifth of the free edge of the left vocal cord, and the rest of the larynx is to all appearance quite healthy. The voice is all but entirely lost owing to the mechanical obstacle offered by the growth to the approximation of the cords. The Prince can just manage to make himself heard by a great effort. He has never suffered from difficulty of breathing, but there was at one time a little trouble in swallowing, which has now disappeared. This was probably, however, unconnected with the disease. Everything seems at present to give grounds to hope for a favorable termination to this important case, the progress of which may be said to be watched with interest by the whole medical world. It will, of course, be self-evident that the full prognosis in such a case must always be a matter of grave anxiety to the most experienced. During the stay of the Crown Prince of Germany in this country, he will be under the care of Dr. Morell Mackenzie, and Dr. Norris Wolfenden will act as resident medical attendant, to carry out the treatment directed by Dr. Mackenzie. Dr. Wegner, of Berlin, has accompanied the Prince as his personal medical attendant.

The following is the text of Professor Virchow's report on the portion of the growth removed by Dr. Morell Mackenzie on June 8th, as published in the *Berliner klinische Wochenschrift*, of June 20th.

The two objects brought to me yesterday by General-Aerzt Dr. Wegner displayed, when examined microscopically, the appearances of a coarse granular papillary outgrowth. Their rounded surfaces had a conglomerate, bluish-white, transparent, shining appearance so far as they were in their natural state, but certain portions which had been exposed to the influence of catechu exhibited a dull, brownish, somewhat crumbling appearance. The portions removed at the operation were somewhat retracted and hidden by the rolling inward of their edges (*etwas retrahirt und durch das umbiegen der Randtheile verdeckt*). They consisted of a soft, fibrous tissue, from which shorter and longer shreds projected. The larger of the two pieces was 3 millimetres long and 2.5 millimetres thick; the smaller was about 2 millimetres broad and thick. But these measurements probably do not accurately represent the natural dimensions, as the particles have diminished in size, owing to the retraction and to the folding of the sections after their extirpation. Microscopic investigation confirmed the diagnosis arrived at from the naked-eye examination. 1. The surface consisted everywhere of a very thick and dense membrane, with stratified epithelium cells. In many of the cells gelatinous granules of large size were visible; here and there lay a nest of cells lying in concentric layers. Toward the inside there was a similarly stratified layer of cylindrical cells (without cilia) implanted directly on the connective tissue. 2. The surface of the mucous membrane was covered with long papillary excrescences, which, besides the elements of the connective tissue, contained rather large vascular loops (*Gefaessschlingen*). Each nodule visible to the naked eye on the surface was formed by a papilla of this kind. As for the rest, the mucous membrane exhibited scarcely any modification; larger granular and cell-growths were only noticed in scanty quantities; the bloodvessels were only moderately dilated. Both portions removed (*schnitte*) included not only the mucous membrane, but extended through it into the submucous membrane. Hence, besides connective tissue with numerous fine elastic fibres, there was a large number of nerve bundles (with from four to six fibres) and their branches, and of small arteries and veins; at some spots there were masses of the lobules of the mucous glands. Although it is proved by this that the incision reached parts situated deep below the mucous membrane, not a single spot that had undergone any appreciable change was discovered, depite the most careful examination of these more deeply situated parts, especially on the extirpated side. All the essential changes affected the surface only. They prove that the tumor is an epithelial growth associated with papillary excrescences (wrongly described as papilloma), an affection termed "pachyderma verrucosa." At no point was the mucous membrane found to be invaded by the epithelial formations. The specimens now before me are of considerably greater scientific value than that laid before me on May 21st; in the particle then examined only scanty lesions of an irritative kind were seen; lesions only distantly to be compared with those found in the particles now examined: in all, probably, the irritative changes affected the periphery of the seat of the disease. It is evident that on the present occasion a more central spot was reached. Although this spot has become affected in a very marked manner, the healthy quality of the tissue on the extirpated portions gives grounds for a very favorable prognosis. Whether such a prognosis be justifiable for the malady considered as a whole cannot be concluded with certainty from the two pieces that were removed. However this may be, there is nothing in them calculated to awaken a suspicion of a further and more serious affection of these parts.

THE MEDICAL REGISTRY BILL OF THE STATE OF NEW YORK.—Governor Hill has affixed his signature to the bill which the New York State Medical Society has been trying for three years to have put on the statute-books, the measure requiring the licensing and registering of physicians. All the schools of medicine finally united this year on the bill which has just become a law. It restricts the list of authorized practising physicians to those already regularly licensed and over twenty-one years of age. Hereafter those who shall be admitted to practice will be confined, first, to those who shall have been graduated from an incorporated medical school or college with the degree of Doctor of Medicine; second, to those who shall have received this degree from the Regents of the University of the State of New York; third, to graduates of incorporated medical institutions in other States and foreign countries which shall have been approved by the institutions in that State. The County Clerk of each county shall keep a registry-book, in which every physician must

register according to a prescribed formula. No person convicted of committing a felony shall be allowed to practise. The penalty for violating the law is $50 fine for the first offence, and $100 or 100 days' imprisonment, or both, for each succeeding offence. The county medical societies are authorized to prosecute any offenders.

A NEW ACT TO REGULATE THE PRACTICE OF MEDICINE IN ILLINOIS.—A bill which has passed the Illinois Legislature and became a law July 1, 1887, requires examination and license by the State Board of Health, with penalties for neglect of the law; regulates the sale of medicines by vendors, and describes a practitioner of medicine in language which covers the claims of mind-healers and a large class of similar imposters. The definition is as follows:

"Any person shall be regarded as practising medicine, within the meaning of this act, who shall treat, operate on, or prescribe for any physical ailment of another. But nothing in this act shall be construed to prohibit service in cases of emergency, or the domestic administration of family remedies. And this act shall not apply to commissioned surgeons of the United States Army, Navy, or Marine-Hospital Service in the discharge of their official duties."

NEW YORK ACADEMY OF MEDICINE.—Active measures are now being instituted toward the erection of a new building for the Academy of Medicine. There is certainly an urgent need for it. The present academy building is altogether too small. It is said that a site has already been selected in a desirable locality, between Sixth and Seventh Avenues, in Fifty-seventh Street.—*Medical Record*, June 18, 1887.

A JAPANESE DEGREE GIVEN TO AN AMERICAN PHYSICIAN.—The Emperor of Japan has conferred the Decoration of the fourth class of the Order of the Rising Sun upon Dr. J. C. Cutter, of Warren, Mass., formerly house surgeon at the Boston City Hospital, in recognition of his services as professor of physiology and comparative anatomy in the College of Agriculture at Sapporo, Yezo, Japan. The order consists of eight classes, and Dr. Cutter is said to be the second American upon whom the order of the fourth class has been conferred. With but a single exception, no order above the fourth has ever been conferred upon an American.—*New York Medical Journal*, June 18, 1887.

SUIT AGAINST THE NEW YORK HOSPITAL.—A suit was recently brought against the New York Hospital by a patient who had been operated upon for cystitis by cystotomy. The damages claimed were $30,000, on account of impotence from injury of both ejaculatory ducts and wound of rectum. The left lateral incision was made. The plaintiff claimed that in consequence of the injury all his semen escaped into the bladder. It was shown by the testimony of Dr. W. T. Bull, the operator, and Drs. George G. Shrady and L. B. Bangs, that such an injury was impossible under the circumstances, and a verdict for the hospital was rendered accordingly.—*Medical Record*, June 18, 1887.

DR. GRAILY HEWITT has resigned the Chair of Obstetrics and Gynecology in University College, London.

DR. KARL PAWLIK, of Vienna, has been appointed Professor of Midwifery and Gynecology at Prague.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 21 TO JUNE 27, 1887.

SUTHERLAND, CHARLES, *Colonel and Surgeon.*—Granted one month's leave of absence, with permission to apply for an extension of one month.—*S. O. 126, A. G. O., Division of the Atlantic*, June 23, 1887.

SMITH, A. K., *Lieutenant-Colonel and Surgeon.*—Will be relieved from duty at West Point, N. Y., on September 30, 1887, instead of on August 28, 1887.—*S. O. 144, A. G. O.*, June 23, 1887.

ALDEN, C. H., *Major and Surgeon.*—Leave of absence extended to include September 29, 1887.—*S. O. 144, A. G. O.*, June 23, 1887.

BAKEHOUSE, J. H., *Major and Surgeon.*—Granted leave of absence for two months, to take effect about July 5, 1887.—*S. O. 141, A. G. O.*, June 20, 1887.

RICHARD, CHARLES, *Captain and Assistant Surgeon.*—Sick leave extended two months on surgeon's certificate of disability.—*S. O. 138, A. G. O.*, June 17, 1887.

CORBUSIER, JOHN J., *Captain and Assistant Surgeon.*—Granted leave of absence for one month.—*S. O. 143, A. G. O.*, June 22, 1887.

SUTER, WILLIAM N., *First Lieutenant and Assistant Surgeon.*—Designated as medical officer for the Rifle Camp at Creedmoor, N. Y., July 5, 1887.—*S. O. 124, Division of the Atlantic*, June 21, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 25, 1887.

CLEBORNE, C. J., *Medical Inspector.*—Ordered for examination preliminary to promotion as Medical Director.

LEMMON, G. P., *Passed Assistant Surgeon.*—Ordered to Receiving Ship "Franklin," Norfolk, Va.

HORNITZ, P. J., *Medical Director.*—Permission to leave the United States for six months.

HARRIS, H. N. T., *Assistant Surgeon.*—Commissioned Assistant Surgeon in the Navy June 13, 1887.

SLEAK, J. C., *Medical Inspector.*—Detached from Naval Laboratory, and granted three months' leave of absence.

BLOODGOOD, DELAVAN, *Medical Director.*—Detached from Naval Hospital, Norfolk, Va., and ordered to the Naval Laboratory.

BEASLEY, MICHAEL, *Medical Inspector.*—Ordered to Naval Hospital, Norfolk, Va.

BEYER, H. G., *Passed Assistant Surgeon.*—Remain on present duty until September 1, 1887.

HICKSON, C. G., *Passed Assistant Surgeon.*—Remain on present duty until June 30, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING JUNE 25, 1887.

GUITÉRAS, JOHN, *Passed Assistant Surgeon.*—Detailed for temporary duty at Key West, Florida, June 23, 1887.

WASDIN, LEGENE, *Passed Assistant Surgeon.*—Relieved from duty at Marine Hospital, New York, N. Y.; ordered to Marine Hospital, Chicago, Ill., June 23, 1887.

NORMAN, SEATON, *Assistant Surgeon.*—To proceed to Charleston, S. C., for temporary duty, June 23, 1887.

HEATH, P. C., *Assistant Surgeon.*—Relieved from duty at Chicago, Ill., June 23, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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ORIGINAL ARTICLES.

LITHIUM CARBONATE AND SODIUM ARSENIATE DISSOLVED IN CARBONIC ACID WATER, IN THE TREATMENT OF DIABETES MELLITUS.

BY AUSTIN FLINT, M.D., LL.D.,

PROFESSOR OF PHYSIOLOGY AND PHYSIOLOGICAL ANATOMY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK; PHYSICIAN TO BELLEVUE HOSPITAL.

AT a recent meeting of the Therapeutical Society of Paris, Dr. Martineau made a brief communication, in which he stated that for several years he had treated cases of diabetes mellitus with a solution of lithium carbonate and sodium arseniate in ordinary carbonic acid water, to the exclusion of every other medicinal remedy, and with a moderately strict antidiabetic diet. Dr. Martineau claimed that he had cured sixty-seven out of seventy cases of arthritic diabetes by this method of treatment, which he had borrowed from a practitioner now dead, the late Prof. Rouget, of Paris. The communication was discussed by Dr. Dujardin-Beaumetz and others, who regarded the method as so simple and, to say the least, innocuous, that it was worthy of trial.

The preparation recommended by Dr. Martineau was the following. Into an apparatus such as is commonly used in Paris for extemporaneously making carbonic acid water, are put twenty centigrammes of lithium carbonate and a tablespoonful of a solution of twenty centigrammes of sodium arseniate in five hundred grammes of distilled water. The quantity of carbonic acid water used is about one litre. This quantity is to be drunk by the patient during each day, either by itself or mixed with ordinary wine at meals.[1]

The simplicity of the proposed remedy led me to make an effort to test its efficacy in certain obstinate cases under treatment for diabetes. I endeavored first to have the agents introduced into the ordinary siphons of soda-water prepared and sold in New York; but the manufacturers were unwilling to do this, and I was forced to adopt some other method of preparation. It was finally suggested to me to put up the preparation in ordinary beer bottles with patent stoppers which could be replaced after using a certain quantity. This is now done by Mr. Theodore Angelo, apothecary, 460 Fourth Avenue, New York City, who has supplied the patients to whom the remedy has been given. Two of these bottles make the equivalent of the quantity administered daily by Dr. Martineau.

I was not prepared to make a trial of the remedy before the middle of April, and have used it since then in but three cases—a time too short, and a number of cases too small to admit of anything like definite conclusions. However, in the hope of inducing others to make similar trials, I venture to present the imperfect results of my own brief experience.[1]

CASE LXXXV.[2]—An unmarried lady, fifty years of age, weighing 115 pounds. Her weight in health was 140 pounds. The disease was recognized six months before she came under my care.

March 11, 1886. The general diabetic symptoms were marked, and the urine contained 2½ grains of sugar per ounce. The patient was put on an antidiabetic diet, according to my published diet-table,[3] with Clemens's solution of arsenite of bromine, five drops three times daily. March 19th, the quantity of sugar was 7 grains per ounce; March 26th, 14 grains; April 2d, there was no sugar; and April 7th, no sugar. From March 26th to April 7th, the diet was absolutely anti-diabetic, no bread being taken.

June 17. The urine had been free from sugar since April 2d, under the anti-diabetic diet. The quantity was normal, and the body weight had increased by four pounds. The patient expressed herself as feeling "nearly well."

July 28. The diet for several weeks had been very imperfect; the diabetic symptoms had returned, and the urine contained 24 grains of sugar per ounce. From this date until April 15, 1887, sugar was found in the urine at every examination, the quantity apparently varying with the diet. During this time I made ten examinations. The general diabetic symptoms were much diminished in prominence, although they were distinct. The body-weight did not undergo much change.

April 15, 1887. The daily quantity of urine was 45 ounces, containing 20½ grains of sugar per ounce.

16th. With no change in general treatment, the patient was put on the solution of lithia and arsenic, about two pints daily.

26th. The quantity of urine was 37 ounces, containing 8 grains of sugar per ounce.

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[1] Bulletin et Mémoires de la Société de Thérapeutique, Paris, 30 Mars, 1887, 18e année, No. 6, p. 41.

Reduced to the English standard, the formula would be about as follows:

Lithium carbonate	3 grains.
Sodium arseniate	⅛ grain.
Carbonic acid water	2 pints.

This formula has been published in a number of medical journals. In some it is stated that a teaspoonful of the solution of sodium arseniate is used instead of a tablespoonful. This error arises from a faulty translation of "cuillerée à bouche," which means a tablespoonful. The term for a teaspoonful is "cuillerée café.

[1] The numbers of these cases are made to correspond with the numbers in my book of records.

[2] Journal of the American Medical Association, July 12, 1884.

[3] Flint: Manual of Chemical Examination of the Urine in Disease, p. 85. Sixth edition. New York, 1884.

May 4. The diet had been relaxed. The quantity of urine was 52 ounces, containing 18 grains of sugar per ounce.

12th. The diet had been more rigid. The quantity of urine was 32 ounces, containing 6 grains of sugar per ounce.

29th. The diet had been imperfect. The quantity of urine was about 40 ounces, containing 24½ grains of sugar per ounce.

On May 12th there was some swelling of the eyelids and the quantity of the solution of lithia and arsenic was reduced one-half. On May 14th, 15th, and 16th, the lithia and arsenic were omitted.

The patient was weak and depressed when the treatment with lithia and arsenic was begun. On May 23d, about five weeks after, she felt much better and stronger, with a gain of two or three pounds in weight.

With the exception of the indefinite statement by the patient that she felt better in spirits and stronger, the lithia and arsenic seemed to have produced no marked effects. This patient is peculiarly susceptible to starchy and saccharine articles of food. Under measures of treatment that had been very beneficial in other cases, she has lately shown little or no improvement; and the most favorable view to take of the case is that the disease, under proper dietetic treatment, may not progress rapidly.

Case XCIII.—A gentleman, sixty-one years of age, 5 feet 5½ inches tall, weighing 157 pounds. The disease was recognized fourteen years ago.

November 19, 1886, the patient came under my care. The quantity of urine was 90 ounces, containing 19 grains of sugar per ounce. The diet had been very imperfect, milk and grapes having been taken freely. He was put upon a strict anti-diabetic diet, with Clemens's solution, five drops three times daily, and one and a half ounces of whiskey three times daily. I saw the patient but once and heard of the progress of the case from time to time from his physician in the country.

April 6, 1887. The patient had not been doing well. He had lost thirteen pounds in weight; the appetite had become very poor, and there was great suffering from pains about the chest and in the limbs.

20th. The general condition was about the same, but the quantity of urine was normal, with 6½ grains of sugar per ounce. The patient was then put upon the solution of lithia and arsenic, two pints daily.

May 11. The general condition was about the same, but the quantity of urine was reduced to 40 ounces and it contained no sugar.

19th. It was reported to me that the general condition of the patient was better and that he was stronger. No report was made of the condition of the urine.

Case XCV.—A married lady, sixty-three years of age, of medium height, weighing 155 pounds. At the present time she has been under my care for a little more than three months. The disease was recognized twelve years ago. In health the patient weighed about 200 pounds.

February 9, 1887. The general diabetic symptoms are well marked. The quantity of urine is excessive and it contains 23 grains of sugar per ounce. The patient was put upon the anti-diabetic diet, with Clemens's solution, five drops three times daily.

14th. The quantity of urine was normal and it had so continued up to this date. The quantity of sugar was 13 grains per ounce. The diabetic symptoms had disappeared.

April 4. The urine has been examined regularly once a week and the quantity of sugar has been gradually reduced to one grain per ounce. The appetite became very poor about a week ago, and insomnia was very troublesome, with shooting pains over the liver.

17th. The patient was put upon the solution of lithia and arsenic, two pints daily.

25th. The quantity of urine was about normal and it contained no sugar.

May 17. The general condition has improved. Since April 25th, the urine has contained about one grain of sugar per ounce. Within the past six weeks the patient has lost fourteen pounds in weight.

April 24. The general condition of the patient is much improved. The quantity of urine is normal and it contains about one grain of sugar per ounce.

The general result of the observations on the three cases reported is quite indefinite. The effects of the solution of lithia and arsenic were not well marked, and the slight improvement under its use in Cases XCIII. and XCV. might have been due to other causes. I shall, however, continue the remedy in these three cases and employ it in other cases until I shall have given it a fair trial; but I do not feel that it would be prudent in any case to relax the dietetic treatment.

With other so-called specifics for diabetes mellitus I have had some experience.

I have given calcium chloride in a number of cases with entirely negative results.

In several cases I have used Jambol, also with negative results.

I have never given opium, except for the relief of pain and insomnia; but in cases in which it has been used it has been well tolerated.

I nearly always prescribe at first Clemens's solution of the arsenite of bromine. This remedy does no harm, and in many cases it seems to exert some control over the thirst, polyuria, and the quantity of sugar in the urine.

I invariably interdict the use of milk and skim-milk. In a number of cases, in which it has been taken by patients on their own responsibility, I have observed that it promptly induces thirst, polyuria, and an immense increase in the discharge of sugar. In some instances, in which my published diet-table has been copied, milk has been added. This addition, it seems to me, is most unwarrantable; and the use of milk more than counteracts the beneficial results to be expected from the anti-diabetic diet properly carried out.

For the past three years I have recommended a gluten bread made by George V. Hecker & Co., of New York. This bread at first contained between

two and five per cent. of starch. Within a year, however, it has seemed to act unfavorably. I have lately had a number of analyses made of this bread, and it has been found to contain about thirty per cent. of starch. Within the last two months I have temporarily abandoned its use, although this has greatly increased the difficulties of the dietetic treatment. It is to be hoped, however, that the Messrs. Hecker, who are untiring in their efforts to produce a satisfactory and uniform anti diabetic bread, will soon perfect their process, so that the bread will be entirely reliable. This will require a more simple chemical process of control, the ordinary methods of ultimate analysis for starch being tedious and expensive.

I have not been able to study the details of the seventy cases mentioned by Dr. Martineau, sixty-seven of which he reported as cured.[1]

The experience of all who have followed out any considerable number of cases of diabetes teaches that the disease is nearly always liable to return under a careless diet; and my own experience is no exception to this general rule. That such an exception should have occurred in the experience of Dr. Martineau would, indeed, be remarkable.

Including the three cases already briefly reported, I have now under observation and treatment ten cases which I have followed for variable periods. It may be interesting to compare seven of these cases with the three treated with the solution of lithia and arsenic.

CASE LXXXIII.—A gentleman, fifty-eight years of age, 5 feet 7 inches tall, weighing 156 pounds. I began the treatment of this case January 17, 1886. The disease had been recognized four years before. The patient had been under the care of an eminent English physician, who gave the opinion, after two or three years of treatment, that the disease would never be entirely cured.

January 17, 1886. The diabetic symptoms were distinct, but slight. The patient had been under a moderately strict anti-diabetic diet. The quantity of urine was 60 ounces, containing 2½ grains of sugar per ounce. The patient was put upon an absolute anti-diabetic diet, without any bread, for two days, and Clemens's solution, three drops three times daily, the dose to be increased in five days to five drops. Two days after, the urine was free from sugar. The patient has continued to be perfectly well in every way up to the present time, being very actively engaged in business.

From January 17, 1886, to May 22, 1887, the urine has been examined twenty-seven times. On December 19, 1886, a trace of sugar was found, this being the only examination in which the urine was not free from sugar. The diet was strict, Hecker's bread being used for the first three months. Since then, while the patient has been careful, the diet has been rather liberal, and the patient has not suffered any serious privation.

CASE LXV.—A gentleman, forty-one years of age, six feet tall, weighing 205 pounds. The disease had been recognized six months, and the patient had lost about forty pounds in weight.

April 22, 1885. The patient had the usual diabetic symptoms in a marked degree. The quantity of urine was excessive, and it contained 21 grains of sugar per ounce. The patient was subjected to essentially the same course of treatment as detailed in Case LXXXIII. In four days the urine was found free from sugar, and the diabetic symptoms had disappeared. Between April 22 and December 22, 1885, the urine was examined thirty-one times. August 10th, the urine contained 9 grains of sugar per ounce; September 1st, no sugar; December 10th, 3½ grains of sugar per ounce; December 22d, no sugar. On the two occasions, the presence of sugar was probably due to indiscretions of diet, and it promptly disappeared under a strict regimen. After the first two months of treatment, the diet was but little restricted. Since December 22d I have seen the patient casually from time to time, and he has reported himself as perfectly well.

CASE XCI.—A gentleman, fifty-six years of age, five feet eight inches tall, weighing 166 pounds. Twelve years ago he weighed 200 pounds. Sugar was recognized in the urine eight years before the patient came under my care.

October 14, 1886. The general diabetic symptoms are slight. For the past eight years the patient has been under a very imperfect anti-diabetic diet, and, so far as I can learn, the presence of sugar in the urine has been constant. The urine is now normal in quantity and contains 25½ grains of sugar per ounce. The patient was put upon essentially the same course of treatment as in Cases LXXXIII. and LXV. On October 21st the urine contained 13½ grains of sugar per ounce; on October 26th, 11 grains per ounce.

29th. The patient was subjected to an absolute fast of thirty-six hours, after the method proposed by Cantani,[1] taking, during that time, nothing but water. The fast was borne very well, and on the day following the patient expressed himself as "feeling as well as he had felt in ten years." The quantity of urine during the last twenty-four hours of the fast was 25 ounces, and it contained no sugar. The ordinary antidiabetic diet was then resumed. October 31st, the urine contained 13 grains of sugar per ounce; November 3d, 10 grains. From November 9th to 20th, there was no sugar. On February 23, 1887, I heard from the patient. His urine had been repeatedly examined, and no sugar had been found. He reported that his "general health had been very good."

CASE VI.—A gentleman, about sixty years of age, 5 feet 6 inches tall, weighing 185 pounds. From March 22, 1878, to February 24, 1885, I had repeatedly examined the urine of this patient while he was partly under the care of the late Dr. Austin Flint. From April 21, 1878, to January 10, 1882, the urine was free from sugar. From October 14, 1882, to February 24, 1885, the urine had generally contained sugar, sometimes in large quantities.

[1] A brief account of three cases, treated by Dr. Martineau, is given in the Therapeutic Gazette, Philadelphia, May 16, 1887, p. 330.

[1] Cantani: Le diabète sucré, p. 402. Paris, 1876.

December 15, 1886. The patient came under my direct care. The quantity of urine was about normal, and it contained 18 grains of sugar per ounce. The patient was languid and easily wearied, but had no abnormal thirst. He was put upon the usual treatment, and took no bread. On December 19th, he was much improved. The urine contained $7\frac{1}{2}$ grains of sugar per ounce. The variations in sugar for a few weeks were as follows: December 23d, 6 grains per ounce; December 26th, $3\frac{1}{2}$ grains; January 1, 1887, a trace of sugar; January 8th, a trace of sugar.

May 24, 1887. The patient had been absent from the city from January 12th to May 4th. He now feels perfectly well. On May 4th and 24th, the urine contained a faint trace of sugar. Since December 13, 1886, the patient has taken no bread. The antidiabetic diet has been rigidly carried out, and the appetite has been tempted by skilfully prepared dishes within the limits of the "diet-table," so that the want of bread has not been a serious privation.[1]

CASE XCII.—A gentleman, fifty-one years of age, 5 feet 11 inches tall, weighing 208 pounds. Five months before he came under my care, he was examined for life-insurance, and no sugar was found in the urine. About three months later, there were thirst, polyuria, weariness, etc., and sugar was found in the urine.

October 20, 1886. The quantity of urine was 100 ounces, containing 31 grains of sugar per ounce. The general diabetic symptoms were marked. The patient was put upon the antidiabetic diet and Clemens's solution. On October 27th, the quantity of urine was reduced to 40 ounces, and it contained no sugar. The diabetic symptoms had entirely disappeared. November 4th and 27th, the conditions were the same. The patient then removed to the West. On January 28, 1887, he wrote me that he was perfectly well. On April 28th he wrote that he was as "good as new." Since his removal to the West the urine has been repeatedly examined and no sugar has been found. The treatment has been continued, with slight relaxation in the diet.

CASE LXXVII.—A gentleman, twenty-four years of age, 5 feet $5\frac{1}{2}$ inches tall, weighing 132 pounds.

October 28, 1885. The general diabetic symptoms were marked. The patient had lost twelve pounds in weight within the past three weeks. The quantity of urine was 112 ounces, containing 28 grains of sugar per ounce. The patient was put upon the treatment already described. On January 6, 1886, the diabetic symptoms had disappeared, and the quantity of urine was reduced to 50 ounces, containing 4 grains of sugar per ounce. On May 19th and June 30th the urine contained no sugar. On September 8th, the quantity of urine was 90 ounces, containing $11\frac{1}{2}$ grains of sugar per ounce. The diet had been imperfect for about two months.

March 2, 1887. The urine was normal in quantity, and it contained 9 grains of sugar per ounce. The patient had been eating freely of Hecker's bread, which, as I have stated, probably contained about thirty per cent. of starch.

CASE LVIII.—A gentleman, forty-three years of age, 5 feet 9 inches tall, weighing 204 pounds. The disease is probably of eight or ten years' standing, but sugar was recognized in the urine only one year before the patient came under my care.

November 30, 1884. The diabetic symptoms were marked. The urine was very abundant and contained 6 grains of sugar per ounce. The patient was put upon the treatment already described. On December 13th the symptoms had disappeared, the urine was reduced to the normal daily quantity, and there was no sugar.

July 7, 1885. The patient had been perfectly well. The urine had been examined seven times since December 13, 1884, and no sugar was found. The diet had been well carried out.

September 20, 1886. The quantity of urine was 55 ounces. The morning urine contained $15\frac{1}{2}$ grains of sugar per ounce, and the evening urine 30 grains. The diabetic symptoms had returned in a moderate degree.

October 12. The urine was normal in quantity, and contained $14\frac{1}{2}$ grains of sugar per ounce. The antidiabetic treatment was resumed. The diet had been unrestricted since October, 1885, the patient then regarding himself as cured.

16th. The urine was normal in quantity, and contained $9\frac{1}{2}$ grains of sugar per ounce.

November 16. The urine contained no sugar, and the diabetic symptoms had disappeared. On January 24, 1887, the conditions were the same.

April 13, 1887. The urine contained $1\frac{1}{2}$ grain of sugar per ounce. The patient had been travelling, and the conditions for maintaining an antidiabetic diet were unfavorable. The patient had been eating freely of Hecker's bread.

The ten cases reported are all that are now under my immediate observation. At the risk of being tedious, I have given certain details regarding these cases, although my records have been considerably abridged in this article. These cases seem to me to be quite instructive. Taken in connection with my other recorded cases, they lead me to the following conclusions:

1. In the three severe cases in which I have used the solution of lithium carbonate and sodium arseniate in carbonic acid water, no very marked effects have been observed in the few weeks during which the remedy has been employed; but the treatment seems to me to be worthy of more extended trial, and it may be useful in mitigating the severity of a strict antidiabetic diet.

2. The so-called specifics for diabetes have little if any effect. An exception, however, may be made in favor of the arsenite of bromine, which has some-

[1] In many regards this case is of great interest. Its progress from March 22, 1875, to August 15, 1884, was reported in my article in the Journal of the American Medical Association of July 12, 1884, Case F. On April 15, 1871, while the patient was under the care of Dr Brown Sequard for some slight nervous disorder, I examined the urine and found it normal. I recognized sugar in the urine, March 22, 1875. Under a moderately strict diet the sugar promptly disappeared, and was not discovered again until October 14, 1882, three years and nearly seven months after, although the diet was unrestricted during the greater part of this time. This might have been regarded as a case of transient glycosuria, if the disease had not become confirmed in 1882 and 1883.

times seemed to me to control, to a slight extent, the thirst, polyuria, and discharge of sugar.

3. The main reliance in treatment is to be placed upon an antidiabetic diet. This has fallen somewhat into disrepute because it is seldom efficiently carried out. In no single instance, out of ninety-nine recorded cases, have I found that the antidiabetic diet had been enforced.

4. Milk should be absolutely interdicted. Its influence over the progress of the disease is prompt, powerful, and most injurious.

5. There are certain cases in which dietetic treatment promptly arrests the disease and keeps it under control. There are other cases in which treatment seems to be of little avail, except in possibly retarding the progress toward a fatal result. Of the ten cases reported, and now under observation, seven are amenable to treatment and three are obstinate.

6. A confirmed diabetic may be cured, in the sense that all symptoms will disappear; but the disease is liable to return at any time under an unrestricted diet. Still, moderate care in diet will often secure immunity.

7. A patient who has once had diabetes should have his urine examined every few weeks. The glycosuria always precedes the general symptoms of the disease, and these general symptoms can generally be forestalled by proper treatment employed as soon as sugar makes its appearance in the urine.

8. As the disease returns, either from imprudences in diet or from other causes, the successive recurrences present greater and greater difficulties in the way of treatment.

SYPHILIS OF THE NERVOUS SYSTEM AND ITS TREATMENT.[1]

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THE task which lies before me to-night is no easy one. It is the task of explaining, within a short space of time, the symptoms that may arise from a disease which affects the whole of the complicated machinery of the brain, the spinal cord, and the peripheral nerves. I cannot hope to do more than outline the subject. To treat it exhaustively would require a book, to which this paper might serve as an introduction.

Some idea of medical interest in the matter may be obtained from a somewhat curious comparison. Professor Max Müller, the well-known philologist, informs us that the whole of the Sanscrit literature, running, as he expresses it, "like a high mountain-path of literature through the whole history of India, and extending over a period of three or four thousand years, is contained in about 10,000 manuscripts"—more, the same authority estimates, than the whole classical literature of Greece and Italy put together.[2] I have been able to count up some 500 different articles that have been written on the subject of syphilis in the last thirty years, and there are probably many more. This is one-twentieth of the whole Sanscrit literature, or of the combined classical literature of Italy and Greece; and, therefore, in order that the literature of this one subject should equal these great national literatures, it would only take the time of about 600 years, or one-seventh to one-fifth of the time of the Sanscrit writings.

Syphilis of the nervous system varies essentially from the syphilis about which the great syphilographers of France, England, and America have written so voluminously, because the phenomena of the disease which they described have been almost entirely confined to the cutaneous surface of the body. When this malady, however, affects the nervous centres and their peripheral appendages, it usually, I am prepared to say, has not been marked in its cutaneous manifestations. Most of the cases I have had the fortune to see had this peculiarity. At the outset, therefore, we are met with one great difficulty, which does not bar the way of the dermatologist—we are deprived of the diagnostic guidance of a group of symptoms which have been carefully studied for many years; and in their place no one has as yet suggested an equally pathognomonic group of nervous symptoms. Unguided by the tell-tale signs upon the exterior of the body, the history of the initial lesion may, as is probably well known to most of you, become very obscure. The primary sore being usually very slight, it may very easily be overlooked, even by those who are in search of it. The infection may come through the husband to the wife, innocently, too, so far as the latter is concerned. Not long ago I heard a lady telling some friends how she had been afflicted with an obstinate headache and subsequent inflammation of the eyes. Now, it so happened that this lady's husband had died a short while before of intracranial syphilis, and on going to her attending physician, I found that he was entirely ignorant of the etiology of his patient's symptoms. The infection may also come through a surgical operation, as is probably known to you; for I suppose that there are very few communities of any size in which physicians cannot be found who have infected themselves in this manner. Or the infection may come through a lesion innocently acquired about the buccal cavity, and even, perhaps, through articles of clothing. Infection through heredity is of no small account. For these different reasons, it may readily occur that many individuals may be entirely unaware of the disease of which they are the bearers. Add to these sources of error the tendency to concealment which so often actuates patients, glandular indurations, exostosis, in hereditary syphilis the peculiar teeth described by Hutchinson, and the record of many miscarriages and dead-births. All these latter incidents may greatly assist us when they are present, which, unfortunately, they are not in a number of cases of nervous syphilis.

At the outset, it should be clearly understood that syphilis may affect the whole of the nervous system—the brain, spinal cord, peripheral nerves, membranes, sheaths, and the bony structures surrounding the nervous tissues, and the bloodvessels within the nervous tissues. It may assume the form of a diffuse infiltration, or it may be limited to a gumma, or it may be confined to the arteries, or there may be

[1] Read, by invitation, before the Philadelphia Neurological Society, April 25, 1887.

[2] India: What can it Teach us? By F. Max Müller, 1883.

diffuse infiltrations, gummata, and arterial lesions in one subject. This diffuse infiltration takes its departure from the capillaries, and consists of numbers of round cells spread throughout surrounding tissues. These are the round cells of the shape of those formations to which Virchow has given the name of granulation tumors, and for which other German pathologists have suggested the name of infectious-granulation-tumors, to which class belong the tubercular formations, lupus, lepra, actinomycosis, and glanders. The cellular character and behavior of each one of these different species are, as is well known, different, as is also their particular location within the body; and two of the salient characteristics of the cells thrown out in a syphilitic infiltration are: that they have scarcely any tendency to suppuration, undergoing a retrogressive metamorphosis by non-suppurative transformations, and that the individual cells are endowed with extraordinarily long-lived vitality. These cells may often lie among the normal tissues for long periods of time and not do any really structural damage. On the other hand, they may set up truly destructive processes that may injure the component parts of a tissue as much as any other destructive process whatsoever.

The arterial lesions were first described in 1874, by Dr. Heubner, of Leipsic, whose observations have given rise to further and often contradictory investigations by Köster, Friedländer, Baumgarten, Rumpf, and many others. Heubner advanced the view that in syphilitic vessels the endarteritis was peculiar in its place of origin, which was in the vessel-less tissue that lies between the *membrana fenestrata* and the endothelium. Normally the *membrana fenestrata* and the endothelium lie so close to one another that no intervening tissue can be seen microscopically. In syphilitic endarteritis, however, Heubner maintains, they are widely separated by a new cellular formation, which consists of a proliferation of endothelial cells, to which, after a certain time, there are added numbers of round cells, as in the ordinary granulation tumors. Heubner very minutely and carefully describes the differences in size of the endothelial cells in health and disease, as well as how to obtain an endothelium that has not been bruised by the ordinary act of cutting the vessel, and it is difficult for any one who reads his painstaking brochure to refuse credence to his plea for this peculiar anatomical site of syphilitic endarteritis, nor is it easy to resist the wish that it were true, as it would constitute so invaluable a guide in dubious cases. But in the thirteen years that have elapsed since Heubner first made his views public, no one has fully confirmed him. Köster, Friedländer, Baumgarten, Huber, Schottelius, Marchand, Rumpf, deny that the endarteritic process starts in the vessel-less structure between the *membrana fenestrata* and the endothelium, or that it consists at first of an endothelial proliferation. They maintain, on the contrary, that the endarteritis is due to the outpouring of round cells from the minute nutritive vessels of the vessels themselves—from the *vasa vasorum*—contained in the outer coats, and that the endothelial proliferation is only a part of the general cellular disturbance that takes place in consequence of this outpouring of round cells. The question needs further investigation. But, however it may be decided, there is no diversity of opinion as to the results which follow upon the endarteritis. The vessels may become narrowed in their lumen by the thickening inward of the fenestrated membrane and the intima. They may become entirely occluded from the same cause. The inner surface of the intima may become roughened or altered in its chemical constitution, and a thrombus may form, which may, in its turn, give rise to an embolus. It may even happen, rarely however, that minute aneurisms may be formed from the wasting of the muscular coat of the vessel, and occasionally there may be a hemorrhage. In other words, a syphilitic infiltration may set up an endarteritis which usually leads to a narrowing of the canal of the vessels, or to an occlusion of it, but which may occasionally lead to thrombi, emboli, aneurism, and hemorrhages.

The prevailing tendency of thought among modern pathologists has naturally led to an endeavor to trace syphilis to a microörganism. As is usual in researches of this kind, our German friends have led the van. As far back as 1869 Hallier thought that he had detected peculiar microbes in the blood corpuscles, and Lustdorfer described syphilitic bodies in the blood. These statements do not seem, however, to have been verified. Klebs, in 1879, Aufrecht, in 1881, and Birch-Hirschfeld, in 1882, described microörganisms which they would have us regard as the cause of the phenomena of syphilis. But the investigations of Lustgarten and Doutrelepont since 1884 have been more precise than those of their predecessors, have been largely confirmed, and have, therefore, attracted far more attention. These gentlemen have described slender bacilli, like straight or somewhat curved rods of about the size of the tubercular bacilli, and they are found singly or in groups in cells. They bear spores, which appear as clear, oval, glittering spots. They are colorable by a method described by Lustgarten. A most energetic discussion of these bacilli, their relations to syphilis and their differentiation from other bacilli, has been and is still going on in France and Germany. The mere catalogue of the disputants will indicate the interest that is felt in the subject—Cornil, Giacomini, Disse and Taguchi (two Japanese medical men writing in German), Klemperer, Köbner, Matterstock, Rumpf, Gottstein, Leloir, Weigert, Baumgarten, Tavel, Alvarez, Eve, Longuard. As a result, it may be stated, that the question is not by any manner of means yet decided; that the bacilli described by Lustgarten have been found by many in syphilitic individuals; that bacilli, similar in some respects to those of Lustgarten, are found in normal smegma and the secretions of the genital organs; that the bacilli of Lustgarten and those of the smegma and the genital secretions differ from one another distinctly in several particulars; that there are probably several bacilli in syphilis, two varieties being described by Rumpf. The bacilli of Lustgarten have been found in all stages of syphilis and in syphilitic alterations in many different tissues, and nothing like them has been found

in non-syphilitic individuals, except in the smegma or the genital secretions, and even here there are alleged points of difference: hence it would certainly seem as if Lustgarten's bacilli bore some relation to syphilis. No one has as yet succeeded in obtaining any pure cultures of these bacilli, and this test is therefore lacking.

So much do we know of the pathology of syphilis.

These diffuse infiltrations, these gummata, these arterial lesions, may, as must be evident to all of you, cause symptoms that are coextensive with the symptoms of derangement of any part of the nervous system. All the recognized mental and nervous disorders may have a syphilitic basis, and in the case of any one of them it simply becomes a question as to whether a history of the infection is obtainable. So far as is known, it is not possible to say of any nervous or mental disorder that it may not have a syphilitic causation; and if we may draw conclusions from the nervous and mental disorders of recognized syphilitic causation, we should say that the prognosis of very few would be materially altered by such etiology. But over and above the well-recognized forms of nervous and mental disease, there are certain groups of symptoms which may fairly be regarded as indicative of specific infection, although the proof may not be greater than that to which the lawyers give the name of "prima facie"—*i. e.*, proof amounting to a presumption, which may, however, be rebutted by adequate testimony to the contrary. These symptom-groups, if I may allowed to formulate from my own experience, are as follows:

1. Quasi-periodical cephalalgia of a peculiar kind.

2. Hemiplegia under forty years of age, with or without preceding cephalalgia of the aforesaid type.

3. Cephalalgia followed by hemiplegia, which bear a singular relationship to one another in that the cephalalgia ceases immediately upon the supervention of the hemiplegia, and does not recur.

4. Convulsions in the adult, which have not been preceded by convulsions in infancy, and are not of traumatic or nephritic origin, or due to pregnancy, or in an individual subject to migraine.

5. Symptoms indicative of a lesion at the base of the brain.

6. A comatose condition extending over days or weeks, not traumatic, meningitic, diabetic, nephritic, or from typhoid fever.

7. Tabes dorsalis.

8. General paresis.

9. Spinal lesions in a subject who has had intracranial syphilis.

1. *Quasi-periodical cephalalgia of a peculiar kind.* One expression of the quasi-periodicity of syphilitic cephalalgia that is well known to the profession is the nocturnal recurrence. But this characteristic may be other than nightly. I have known the headache to recur repeatedly at a certain time of the day, usually in the afternoon. What is very misleading, too, in the way of differentiation of malaria is that this cephalalgia may yield readily, although temporarily, to large doses of quinine. This quasi-periodical form of neuralgia may be accompanied by an obstinate insomnia, and by considerable mental irritability, both insomnia and irritability bearing no adequate proportion to the amount of pain; when the latter signs are present, they are of considerable diagnostic importance, because the cephalalgia of brain tumor or nephritis is not usually accompanied by them.

2. *Hemiplegia under forty years of age, with or without preceding cephalalgia of the aforesaid type.* It is a fair clinical distinction that can be used for guidance of one's inquiry, upon first talking with a patient, to bear in mind that hemiplegia in the adult under forty years of age is usually of syphilitic origin, whilst hemiplegia in the adult above forty years of age is due to the chronic degenerative endarteritis of middle life and old age. Hemiplegia may occur in children, of course, from many other causes, and should, therefore, be ruled out in the present inquiry. This adult hemiplegia of specific origin may be either motor or sensory, or both, for anatomical reasons that need not be explained.

3. *Cephalalgia followed by hemiplegia, which bear a singular relationship to one another, in that the cephalalgia ceases immediately upon the supervention of the hemiplegia, and does not recur.* This is a curious clinical feature to which, so far as I know, no writer has yet made allusion, and one which I have observed in over forty cases, although I can offer no explanation of it whatsoever. I have never seen it except in syphilitic hemiplegia. I should like to ask the attention of the profession to this point, in order that it may be tested.

4. *Convulsions in the adult, which have not been preceded by convulsions in infancy, and are not of traumatic or nephritic origin, or due to pregnancy, or in an individual subject to migraine.* It is too much the custom, I think, to regard convulsions in infancy as harmless, and not prone to recurrence. In a paper which I read several years ago,[1] I called attention to the fact that a large proportion of the cases of epilepsy in youths or adults, would be found upon careful inquiry to have had a convulsion in early life, that had usually been attributed to dentition or intestinal or febrile complaints; and of such early convulsions it may be very difficult to obtain a history unless the parents or some other near relatives are interrogated. The convulsions occurring in nephritis, or in certain women during pregnancy, are too well known to need more than a bare reference. Again, it is a curious fact, to which I have referred in the paper just mentioned, that migraine is interconvertible in certain individuals with epilepsy, so that most individuals who have a personal or hereditary history of migraine will be found upon minute and patient interrogation to have had a loss of consciousness or epileptic-like convulsion at some period of their life. If, however, pregnancy, migraine, nephritis, trauma, and preceding infantile convulsions, are excluded, a convulsion in an adult should give rise to grave suspicions of intracranial syphilis.

5. *Symptoms indicative of a lesion at the base of the brain.* Syphilis is especially apt to hug the base of the brain, and more especially that anterior portion of

[1] The Treatment of Epilepsy, N. Y. Med. Journal, June 28 and July 5, 1884.

it which forms the hexagon wherein lie the olfactory, the optic, the motor oculi, and the fourth pair of nerves, as well as the crura cerebri, and lesions of which impair the functions of these cranial nerves on one side of the body, and induce disturbances of motion and sensation upon the opposite side, giving rise to the so-called "crossed paralysis." Of course, tuberculosis has a predilection for the same site, but the history of the patient and the presence of pulmonary symptoms make easy a diagnosis of this affection. It is true also that tumors of non-specific origin may be found in the same location, but usually they are not so diffuse as a syphilitic infiltration, and usually also the specific lesions of this part of the brain are accompanied or have been preceded by a characteristic cephalalgia.

6. *A comatose condition extending over days or weeks, not traumatic, meningitic, diabetic, nephritic, or from opioid fever.* It is not always easy to exclude the coma of meningitis, especially in the early stage before the characteristic symptom of retraction of the head has made its appearance, although the temperature curve may be of great assistance. In my experience, this retraction of the head is of well-nigh infallible importance. Fränkel, however, has reported a rare and curious case, from the wards of the Charité Hospital in Berlin, in which this retraction of the head was found (post-mortem) to be due to a lesion in the middle portion of the ascending frontal convolution, just where the centre for the muscles of the neck has been located on *à priori* grounds by Wernicke. The coma of nephritis, it must also be borne in mind, is not always of the profound nature that is seen where the urine contains large amounts of albumen. It may be light, variable in its manifestations, simulating a profound hysterical condition. Nor will it do to exclude nephritis by a mere cursory examination of one specimen of the urine for albumen. Several specimens should be obtained. Best one at morn, midday, and evening, and the amount of urea should be estimated, casts, blood-corpuscles, and pus should be carefully searched for, and albumen should be sought for by the finer modern methods, rather than by the old and rough test by heat and nitric acid. I have more than once been called into consultation regarding conditions of coma, and I have been informed that nothing had been found in the urine to indicate nephritis, and yet the autopsy has disclosed advanced disease of the kidney. Diabetes can, of course, be easily ascertained. Some anomalous cases of typhoid fever are apt to mislead one at the start, although the progress of the disease almost invariably makes the diagnosis very certain.

7. *Tabes dorsalis*, and

8. *General paresis.*

It is not of much practical importance to ascertain the presence or not of a specific infection in these two grave maladies, because, so far as I have seen, the syphilitic causation has for them only this significance, that they will do rather better upon anti-specific treatment than the non-syphilitic cases; the course of the disease, however, is not materially altered.

9. *Spinal lesions in a subject who has had intra-cranial syphilis.* These spinal infections always require unusually large doses of the anti-specific remedy.

This quasi-periodical cephalalgia, this hemiplegia under forty years of age, this cephalalgia ceasing upon the supervention of hemiplegia, these convulsions in the adult, these lesions at the base of the brain, these comatose conditions may be present singly or in varied grouping, and singly or in groups they should always give rise to a strong suspicion of antecedent specific infection.

We have seen how difficult it may be to obtain the precise history of the initial lesion in such cases. The question at once arises as to what significance may attach to the success or non-success of anti-specific treatment. There can be no question that the profession are illogical in attaching the importance that they usually do to the results of such anti-specific treatment, because mercury and the iodides are efficacious in many affections that have no specific etiology. All the same, however, I cannot disabuse my mind of the fast-rooted impression that a disease which disappears rapidly and completely under anti-specific treatment, and which has not been affected by other forms of medication, is of specific origin.

The *prognosis* is dependent upon the question as to whether the lesions are destructive or non-destructive, and in many cases it is treatment alone that can determine this point. In general terms it may be said that syphilis of the nervous system is of good prognosis except where it has set up actual organic disease, except where it has excited in the normal tissue the formation of some other structure that is foreign to the particular texture. The infiltrations of the nervous tissues themselves, the gummata, the arterial lesions, are by themselves remarkably harmless. It is singular to see, as we often do, how much and how long the nervous structure will present evidences of syphilitic disease and yet recover entirely under adroit and vigorous treatment. Buzzard tells of an artery that had been almost occluded, being tested by the sphygmograph and yet was freed by proper treatment. To speak more precisely, it may be said that the symptoms of good omen are:

Nervous syphilis in its early stage: lesions at the base of the brain; spinal lesions without preceding intracranial specific disease; peripheral lesions.

Of uncertain omen are:

Long standing nervous syphilis;

Syphilitic insanities;

Spinal lesions with preceding intracranial specific disease;

Convulsions;

Comatose conditions;

Hemiplegia.

Of bad omen are:

Tabes dorsalis;

General paresis;

Nervous syphilis in persons whose general health is bad;

Relapses in spite of anti-specific treatment;

Nervous syphilis in persons who bear the iodides badly.

I have very pronounced ideas in regard to *treat-*

ment. I know of no reason for dogmatism except considerable experience, and that is my excuse for my dogmatism. I have no faith whatsoever in mercury, and I have discontinued its use for some time past. Again and again have I seen cases go halting along in the most uncertain manner, under mercurial treatment, and yet have the symptoms been smoothly, gradually, and certainly removed by the iodides. In several cases, too, I have known of death, although the most careful mercurial treatment had been pursued in enormous doses, and these cases have been precisely similar, as far as anyone is able to judge of one case by another in the practice of medicine, to others that I have been accustomed to regard as of favorable prognosis under the treatment by the iodides. I am quite prepared to say, that unless the iodides with their proper adjuvants—of which I shall speak in a moment—can cure a case of nervous syphilis, it cannot be cured at all. But the dose of the iodides which are administered by the Germans and French will often be entirely inadequate. I give the iodides until the symptoms yield, or until iodism is produced. I make use of the saturated solution of the iodide of potash, each drop of which contains almost a grain of the salt. I commence with twenty drops three times a day, and increase it each day by two or three drops at each dose, and keep increasing until the symptoms yield or iodism is produced. Should iodism ensue before the symptoms yield, I pursue one of two methods. I first increase the dose of the iodide by about one-third, and rapidly increase each succeeding day. Singular to say, in some cases this increased dosage will cause the iodism to disappear, and the larger doses will be borne very well. Should, however, these larger doses still more increase the iodism, I decrease to one-half of the dose at which the iodism had begun, and continue this decreased dose until the iodism diminishes or disappears, when I again rapidly increase the dose, and am usually able to go on without further trouble. In some few individuals, however, no amount of care will cause more than a certain amount of the iodide to be borne, and such cases, as I have said, are usually of unfavorable prognosis. In some cases, too—fortunately they are rare—even small doses of the iodide will produce a cardiac disturbance that prohibits its administration. But this last fact should not be confounded with the phenomenon that the profession generally does not seem to be cognizant of, namely, that small doses of the iodide, five or ten grains, will usually produce more iodism than the larger doses. I am perfectly well aware that the medical chemist will object that these large doses of the iodide pass through the body and are quickly excreted by the urine; but I am equally well aware, in the face of this fact, that these large doses of the iodide will cause symptoms to yield that cannot be made to yield by lesser doses. I have given as much as eight hundred grains of the iodide of potash in the twenty-four hours, and have seen symptoms disappear with these enormous doses that would not yield to minor ones. I administer the iodide after meals, and either in a full tumbler of ice-water, or in a glass of Vichy, or in a glass of a Bohemian spring water, the Giesshübler. I prefer the Giesshübler to the Vichy, although it is more expensive, because it is much more pleasant to the taste, and agrees much better with the average stomach. Moreover, the Vichy water which is put up in siphons in this country is artificial, by no means equal in its effects to the natural water, and the natural water, either of this country or of Europe, does not keep as well in bottles as does the somewhat similar water of the Bohemian spring.

But he who expects to cure his patient with the iodides alone, unless the case be so grave as to call for immediate relief, will be disappointed. The human organism must be put in the best possible condition. A generous diet should be employed. Freedom from care and worry, where possible, should be enjoined, and all strenuous exertion of body or mind avoided. And let me say here that in many broken-down individuals the most satisfactory results may be obtained from a conjunction of the iodides with the brilliant treatment that has been made known by Dr. Weir Mitchell, under the name of "Fat and Blood making"—a therapeutical procedure that, in my humble opinion, will rank in coming years with the surgical revolution inaugurated by Lister. When the acute symptoms have been brought under control, travel, especially an ocean voyage, will often work wonders. In every case that tends to chronicity staple tonics and alteratives should be used.

I have often asked myself, when a person can be considered to be cured of nervous syphilis; and I have never succeeded in answering the question to my own satisfaction. I know of no data by which we can guide ourselves. I have seen relapses occur years after the disappearance of every untoward symptom, and I have seen them even where a certain moderate treatment by the iodides had been maintained. I usually impress this uncertainty upon my patients, warn them to be on the lookout for future symptoms, and apprise whoever may be their attending physician of their possible significance, and I enjoin them to keep up moderate doses of the iodide for years. This last precaution I observe the more readily because I have but seldom seen any ill-effects from the continued administration of the iodides, to which patients usually become accustomed as they do to common salt. Occasionally it may happen that an obstinate pharyngeal or post-nasal trouble may be induced, or some unsightly cutaneous eruption, but, as a rule, these are controllable, and in any event they are far preferable to the possibilities of nervous syphilis.

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SURGICAL PUNCTURE OF THE HEART. A WARNING.

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There appeared in The Medical News of June 4th, a paper entitled, "An Experimental Study of the Effects of Puncture of the Heart in Cases of Chloroform Narcosis," the author of which seems to be unaware of certain phenomena that result from puncture and other forms of cardiac stimulation, to which it is proposed briefly to direct attention, on account of the relation they have to the practical bearings of the subject.

That a heart that has recently ceased to beat can often be restarted by needle puncture, etc., has been known for physiological ages, and it needed no further lengthened series of experiments to demonstrate it. In 1884, Professor Kronecker, then of Berlin, ascertained, at first accidentally, that a needle thrust into the heart of a dog may arrest the ordinary ventricular beat, and substitute for it a "fibrillar" action, a sort of incoördinated movement of the muscular fibres, quite ineffective in expelling any blood from the organ. The auricles continue to beat as usual, and while they remain amenable to the action of the vagus nerve, the ventricles pass wholly beyond its control.

Professor Kronecker made many experiments, and gave several demonstrations, at some of which I had an opportunity to assist, as I then was enjoying the hospitality of the Berlin Physiological Institute. An account of these researches was published in the proceedings of the Berlin Medical Society, I believe. It was found that the vulnerable area was near the line of the left coronary artery, therefore near or in the septum of the ventricles, at about one-third of the distance from the base of the heart. Professor Kronecker assumed the existence of a nervous "coördinating centre," which, however, he had not at that time demonstrated anatomically.

This phenomenon I demonstrated in the Physiological Laboratory of McGill University, before the physiologists attending the meeting of the British Association for the Advancement of Science, in Montreal, in 1884, when the causation of this most curious behavior of the heart gave rise to an interesting discussion.

In the investigations on the hearts of the cold-blooded animals which I have been carrying on during the past three years, a good many opportunities have been afforded me of studying the phenomenon as it is manifested in them. It can be readily induced in the sea-turtle by electrical stimulation of the ventricles. In one case it seemed to have been originated in the terrapin by the entrance of sodium carbonate into the heart during a blood-pressure experiment.

From the fact that one may make many punctures as near to the suspected area as can be guessed without inducing fibrillar action, while after the heart has been long experimented on in some other way, or its vitality otherwise lowered, merely seizing it with the hand may originate the action in question, it has occurred to me that it is a result of stimulation of the muscle under peculiar conditions; in fact, that it is not of nervous, but of muscular origin.

That it is so in the turtle, very numerous observations leave me no room to doubt. It can be induced in dogs, rabbits, and the chelonians, by electrical stimulation as well as by puncture, manipulation of the heart, etc. But there is this most important difference in these animals, that while they all, except the dog, recover from this aberrant behavior of the heart, in this animal it is *invariably fatal*, the creature being as surely asphyxiated as if his heart had ceased to contract.

Whether puncture must be confined to the very circumscribed area referred to above, to cause the fibrillar contraction, I am unable, from personal observation, to say; but that there is no such limitation in the turtles I have again and again proved. The phenomenon in the dog lasts from seven to ten minutes when the heart is arrested beyond the power of recovery. There is reason to believe that the heart of man would behave similarly to that of the dog. It is easy to understand why, if the area that is vulnerable is limited, or if the effect is dependent on the condition of the cardiac muscle, scores of punctures might be made without a fatal result. Indeed, Prof. Kronecker stated that his discovery explained why slight wounds of the heart had in some cases proved fatal, while much more serious ones, from the surgical point of view, had been comparatively harmless. This physiologist also thought physicians were, in the light of these facts, no longer justified in using electricity over the heart to recover from chloroform narcosis, etc.

I have no intention of entering upon a general criticism of the paper which has called forth these remarks, but when the author of that paper transfers his conclusions from dogs to men (a process not perhaps physiologically very objectionable in itself in such a case), and seriously proposes needle-puncture *as a remedy*, knowing the facts referred to above, it is impossible that I should remain silent, and not sound a warning against such a *possibly* dangerous procedure. The insertion of a needle into the heart might excite the quiescent organ to action, while again it might cause a feebly beating heart, that would perhaps recover if given a chance, to become hopelessly incoördinated.

HOSPITAL NOTES.

TREATMENT OF CHOLERA INFANTUM IN THE NEW YORK HOSPITALS.

Bellevue Hospital.

Dr. A. Jacobi treats the cases which come into his ward, as follows:

Internal Medication.—*Empty the stomach and bowels* of fermenting masses. The castor oil of the lay

public answers well. A dose of calomel (grs. j–vj) answers better, because it acts as an anti-fermentative, beside being a purgative.

Neutralize acids (fat acids) in the stomach. Carbonate or phosphate of calcium, grs. j–ij, every one to two hours, acts as an adjuvant to other treatment. Bismuth also answers this indication, besides being an anti-fermentative. Dose, grs. ss–ij every one to two hours. May (must) be combined with opium, Dover's powder, grs. $\frac{1}{10}$–$\frac{1}{5}$–$\frac{1}{3}$, every one, two, to four hours. No salts of magnesium or sodium, because they add to the diarrhœa in these acute cases. Avoid syrups to correct the taste of medicines. They will turn sour. Prefer glycerine.

Anti-fermentatives.[1]—Calomel, bismuth, alcohol, creasote, salicylate of sodium, and resorcin have been recommended for their anti-fermentative effect. Of the two latter I prefer resorcin, iv–x grains *a day*, in solutions (suspensions), or as a constituent of powders (with bismuth, chalk, opium).

Sedative.—Opium depresses hyperæsthesia, hyperperistalsis, and hypersecretion. Dover's powder (gr. $\frac{1}{10}$ to $\frac{1}{3}$ every two to three hours) acts very well, though some writers object to it, and is indispensable. Does well with bismuth, and prepared chalk, with or without resorcin.

Astringents.—In acute cases, and when the stomach participates in the process, lead, tannin, gallic acid, alum, etc., are badly borne. In chronic protracted cases they will find their indication. Nitrate of silver does better in many acute cases, gr. $\frac{1}{20}$th to $\frac{1}{10}$th in 2 drachms of distilled water (dark bottle) every two hours. Creasote water in chronic cases.

Stimulants.—Alcohol may be admixed to food. Bad brandy or whiskey contains fusel oil, which is a paralyzing agent. Whiskey is therefore preferable with us, because it can be obtained in greater purity for less money. (See under "Food.") Never give it raw. Camphor is better borne than ammonia. It is easily taken when simply rubbed off with glycerine suspended in mucilage (gr. $\frac{1}{4}$—ij every one to two hours). The strongest nerve stimulant of all is *Siberian* musk. Give in *urgent* cases of collapse gr. i–ij every fifteen or thirty minutes (best suspended in mucilage) until six or twelve grains have been taken. A very good stimulant in collapse is the injection into the bowels through a long flexible tube (catheter No. 12) of hot water with some alcohol, and one or a few drops of tinct. op.

External Applications and Hygiene.—In acute cases with high temperature applications of water of 60°–70° to abdomen. Where much pain and with anæmic children, warm applications do better. Frequent injections of water of 100° F. answer well in most cases, not only in rectal catarrh. In collapse or great debility, the water ought to be from 105° to 112° F., and contain some alcohol and opium. Part of this water will be absorbed, fill the bloodvessels, and may prevent intracranial and other thromboses. The addition of gum-Arabic to the injection, or the use of glutinous decoctions (flax-seed) instead of water is quite satisfactory. Open doors and windows in hot weather. Select the coolest place in the neighborhood for the patient, day and night. Night air is better than no air. Country air, sea air, better than city air, particularly at some altitude. When the body is warm and the weather hot, wash the body with cool water, or alcohol and water (1 : 5) frequently. Cold feet must be warmed artificially.

Food.—No raw milk, no boiled milk, no milk admixture at all, in bad cases. In vomiting and severe diarrhœa, *total abstinence* for from one to six hours. Afterward teaspoon doses of a mucilaginous or farinaceous decoction. Regular food : 5 ounces of barley-water, 1–2 drachms of brandy or whiskey, the white of 1 egg, salt and sugar, teaspoonful every five or fifteen minutes, according to age and case. May be mixed with mutton-broth, which, with white of egg, etc., is better than beef soup or beef-tea in convalescence. Abstinence better for vomiting than ice; the latter may quiet the stomach, feel pleasant, but stimulates peristalsis. Avoid beef-tea. If it be given in convalescence, mix it with barley-water.

Toward the end of the disease, or when the discharges are many and copious, and inspissation of blood, and thromboses (hydro-encephaloid) threatening, the common sense of the practitioner will introduce liquid into the circulation as best he can. No written rule ever supplies or substitutes brains.

New York Infant Asylum.

Dr. L. Emmett Holt holds that as pure air and proper feeding are the most important things in prophylaxis, so they are the most important in the treatment of this disease. Sick or well, there is no food for a baby that compares with good breast milk. If this is being used, or can be obtained, the quantity only needs to be regulated. Not more than half the child's allowance when well should be given, and if the stomach is very irritable, all food should be withheld for half a day or a day, giving nothing but toast-water or thin whey to allay thirst. If a child has been weaned, or good breast milk cannot be obtained, cows' milk had best not be trusted, as it is so easily changed in hot weather, especially in cities and among the poor. In the country, where fresh milk can be obtained twice a day, it may not hold; but in the city, children certainly do better when milk is withheld, and other articles not so prone to fermentation are given. Chicken, beef, and mutton broths, expressed juice of roast beef or steak, wine-whey, white of egg shaken up with water, rice-water, barley-water, or the malted foods, koumyss, and in some cases raw scraped beef, are articles with which we may replace milk.

The first indication in every case, except true choleriform diarrhœa, is to clear out the bowels as completely as possible, by a good dose of castor-oil, or by one or two grains of calomel in the form of tablet triturates. This will be sufficient to cure a large number of the

[1] The practice of giving anti-fermentatives has preceded the theory for centuries. Still the theory is not quite so recent as a few modern journal articles appear to believe. In "Treatment of Infant Diarrhœa and Dysentery," by A. Jacobi, M.D., in *Amer. Journ. Obst.*, etc., July, 1879, there are the following remarks:

"A further indication is to destroy ferments. For that purpose most metallic preparations will do fair service. One of these is calomel . . . as to its effect as an anti-fermentative there can be no doubt. . . . Possibly, it acts by a portion of the drug being changed slowly into the bichloride of mercury."

"Alcohol certainly arrests fermentation."

"Sometimes, particularly when the stomach can be relied on, the salicylate of sodium may be added to the internal treatment. . . . The salicylic acid may prove beneficial, both by its antifebrile and disinfectant action."

milder cases, if taken early, provided the feeding rules laid down are carefully followed. In more severe cases, and in those of longer standing, a simple clearing out produces only temporary improvement; further measures must be taken to restore healthy action of the alimentary tract and stop decomposition. Salicylate of sodium, in grains j–ij doses, every two hours, or naphthalin in double the amount, we have found the most useful.

High temperature should be reduced by baths or cold sponging. It should not be forgotten that this may come from septic absorption from the bowels; if the temperature has risen coincidently with a great reduction in the number of discharges, a brisk cathartic will prove the most efficient antipyretic.

Cerebral symptoms may likewise be toxic, and, if so, should be treated in the same manner.

The object of treatment is not simply to arrest the discharges, but to restore their healthy character. Hence, opiates are not admissible at the outset, and never during the course of the disease when the discharges are foul and offensive. The retention in the intestinal canal of such matters, loaded with bacteria, can only result in harm.

Last summer, in this Asylum, a trial was made of the method of irrigation of the bowels with simple water or weak astringent solutions, in twenty-one cases. Only eleven were cured by this treatment alone. Although the results were not so gratifying as was anticipated from the accounts published in Germany, still some very bad cases did surprisingly well under it. It is certainly deserving of a more extended trial, as a valuable addition to our therapeutics.

True choleriform diarrhœa was treated in a few cases by hypodermatics of morphia and atropia; one or two yielded quite promptly; others, no more severe apparently, were uninfluenced by it.

The German Dispensary.

Dr. Augustus Caillé varies the treatment with the period at which the child comes under observation. Inasmuch as a simple dyspeptic diarrhœa may develop into the most violent choleraic diarrhœa through the agency of high temperature and improper feeding, it will be well to consider briefly the prophylaxis of cholera infantum—*i. e.*, the treatment of gastric catarrh, with tendency to diarrhœa. The diet of the sick child must be at once restricted. Food should be withheld for a period of from six to twelve hours, and water given *ad libitum*, also oatmeal, barley, toast-water, and lime-water. Nursing babies can be deprived of the breast for the same length of time.

The bowels should be evacuated by means of castor oil, magnesia cum rheo, or calomel gr. ½, sugar gr. v, pro dosi, given every hour until five are taken. It is best to place the powder dry upon the tongue. If the tongue remains coated twenty-four hours after the administration of calomel, etc, dilute hydrochloric acid, with or without pepsin is indicated.

R.—Acid. muriat. dil. . . . gtt. xl.
Aquæ . . . . ℥j ss.
Pepsini pur. . . . . ℥ss.
Syrupi simp. . . . . ℥ij.—M.
Sig.—Teaspoonful every hour.

Or,

R.—Acid. muriat. dil. . . . ℥ss.
Aquæ . . . . ℥xiv.
Tincturæ opii . . . . gtt. ij.
Syrupi simp. . . . . ℥ij.—M.
Sig.—Teaspoonful every two hours.

In acid dyspepsia, alkalies (mist. cretæ) are indicated.

In order to save time and prevent misunderstanding, Dr. Caillé has found it a good plan to have a diet-card printed, which he presents to the parents, telling them to give to the sick child the articles of diet which are not crossed out. The articles enumerated on the cards are as follows:

Barley-water, oatmeal-water, white of egg in water, gum Arabic in water, lime-water, whiskey in water, bread crust boiled in water and allowed to cool, milk with any of the above waters, meat broth with any of the above waters, cold tea.

The acute attack (cholera infantum) calls for the following treatment:

1. Antifermentative (antiseptic) measures.
2. Rest for the intestinal tract.
3. Stimulation and prevention of collapse.

If a child is seen early, before collapse has set in, it should be kept as quiet as possible, and no food given for six to ten hours, on account of irritability of stomach. Pounded ice, with or without whiskey, cold tea, ice tied in a rag to be held in the mouth, are advisable; also, lime-water, toast-water, rice-water.

To meet indications 1 and 2 he relies upon the following drugs:

R.—Bismuth. subcarb. . . . ℥j.
Aquæ cinnam. . . . ℥ij.
Tinct. opii . . . . gtts. ij.—M.
Sig.—Teaspoonful every one to two hours.

Or,

R.—Sodii benzoatis . . . ℥j.
Aquæ . . . . ℥xiv.
Syrupi . . . . ℥ij.—M
Sig.—Teaspoonful every two hours.

Or,

R.—Acid. carbol. pur. . . . gtt. ij ad vj.
Mucilaginis . . . . ℥ij.—M.
Sig.—Teaspoonful every two hours.

Or,

R.—Argenti nitratis . . . gr. ij.
Aquæ destil. . . . ℥ij.—M.
Sig.—Teaspoonful every two hours.

Or,

R.—Resorcin . . . . gr. ij.
Aquæ cinnamomi . . . ℥ij.
Tinct. opii. . . . gr. ij.
Sig.—Teaspoonful every two hours.

He avoids the addition of syrup to a mixture, if possible, and omits the opium if the patient apparently has little or no pain.

When children are very restless, and show by their actions that they suffer pain, he does not hesitate to give

small doses of opium, one, two, or three drops in a two-ounce mixture.

A towel wrung out of cold water and secured over the abdomen, appears to relieve pain; and a warm mustard bath stimulates in impending collapse.

For obstinate vomiting he frequently gives:

R.—Tr. iodin. . . . . gtt. xv.
Aquæ menthæ . . . . ℥j.
S.—15 ℳ every hour.

A change of air is of the utmost importance. Children taken from a hot tenement to the seashore, or any cool, shady place, improve perceptibly in a short time, if not too far collapsed.

Large enemata of tepid water, with or without the addition of some antiseptic drug (acid. salicyl.), should be tried in obstinate cases, but in dispensary practice this method cannot well be carried out.

Stimulation must not be delayed until symptoms of collapse are marked. Young children with high temperature, cold and clammy feet and hands, and a pulse too rapid to be counted, are frequently stimulated in vain. The best stimulants in his experience are:

R.—Camphoræ . . . . gr. ¼.
Sacchar. . . . . gr. vj.
Pro dosi, one every three hours.

R.—Camphoræ . . . . gr. ¼.
Pulv. Doveri . . . . gr. $\frac{1}{10}$.
Pro dosi, one every two hours.

R.—Camphoræ . . . . gr. j.
Bismuthi . . . . gr. vj.
Pro dosi, one every two hours.

If the children vomit the drug, it will be necessary to give camphor in ether, or camphor, caffeine, and ether hypodermatically.

In dispensary practice children cannot be seen oftener than once every other day, or every day at the utmost; it is, therefore, a good plan to prescribe antifermentative medicine and camphor powders at one consultation, and direct the parent to give the powder after the medicine has been taken.

During the period of reconvalescence, astringents are indicated to combat the intestinal catarrh, such as tannic acid, acetate of lead, with or without opium. To guard against relapse, it is of the utmost importance to select the proper food for children deprived of the breast. In the majority of cases milk and oatmeal or barley gruel, in different proportions, according to age, with a pinch of salt, some sugar, and, if necessary, lime-water, will be the proper food for a child up to twelve months. This food has been repeatedly recommended by Prof. A. Jacobi for the past twenty-five years. If it fails, others should be tried. Dr. Caillé has had good results from the employment of the so-called "peptogenic milk powder," and one or two other preparations recently introduced.

MEDICAL PROGRESS.

A NEW AND IMPERVIOUS SURGICAL DRESSING.—Photoxylin, a substance in use amongst photographers, was recommended some time ago by DR. KRYSINSKI as a suitable material for mounting microscopic specimens, and more recently still it has been utilized by Professor Wahl, of St. Petersburg, as a substitute for collodion in surgical practice. A five per cent. solution in equal parts of alcohol and ether he finds preferable to collodion, as it adheres more firmly to the skin, not being so easily rubbed off in washing. It is absolutely impervious to liquids, and exerts a perfectly even compression on the tissues. In out-patient practice Prof. Wahl finds that, after small operations such as the extirpation of glands, the application of photoxylin solution enables him to dispense entirely with voluminous antiseptic dressings; also in plastic operations on the face, and in operations in the neighborhood of the male genital organs, such as those for the radical cure of hernia and castration, where it is very difficult to prevent the urine soaking through antiseptic dressings. Prof. Wahl, after carefully arresting all hemorrhage, closes the wound with sutures and gelatine plaster, and then covers the whole with a thin layer of wool soaked in a solution of photoxylin. This, it is stated, will remain eight or ten days, entirely resisting all the effects of moisture. Even in laparotomy, extensive dressings may, he believes, be dispensed with by painting a solution of photoxylin over the wound with a brush, or by the application of a layer of cotton-wool soaked in the same liquid. —*Lancet*, June 18, 1887.

A RARE COMPLICATION OF PLACENTA PRÆVIA.—DR. GEORGE LOGAN reports, in the *Lancet* of May 21, 1887, a case in which, in addition to placenta prævia, the placenta was adherent in the following remarkable manner: "After turning, the child was easily delivered, but it was dead. It now became evident why the placenta could not be extracted; it was intimately adherent to the head of the child. As nearly as could be calculated, the surface of attachment measured in diameter about two inches and a half, and the situation of its centre was a point a little below the posterior fontanelle. The neck of the child was very short, the head having the appearance of being attached to the trunk, without neck at all. The forehead receded very much, so that the supra-orbital ridges became very prominent, as were also the eyes; the bridge of the nose extended upward beyond the eyes, and separated them. The cord was quite natural, both at its origin and insertion, and in every other respect the child, which was a male, was well developed. The mother made a good recovery."

THE DISINFECTION OF DWELLINGS AND THEIR CONTENTS.—GUTTMANN and MERKE, at a recent meeting of the German Society for Hygiene, reported their experiments with solution of corrosive sublimate, one per cent., in spray, in the disinfection of carpets and hangings. It was found that colored materials and walls were not injured by the spray that was used, which made the surfaces quite wet. Of 200 carpets disinfected none were injured. Sublimate was found upon the walls twenty-seven days after the disinfection; and to hasten its removal a one per cent. solution of sodium carbonate was used, which formed an insoluble mercuric oxychloride, which could be easily removed from the walls by sponging and drying. Material saturated with cultures of anthrax and placed among the materials disinfected, showed a destruction of half the germs;

it is probable that improvements in the manipulation will increase the efficiency of the process. With ordinary care, those who made the disinfection were uninjured by the sublimate.—*Wiener medizinische Presse*, May 15, 1887.

Treatment of Flatulent Dyspepsia.—Huchard recommends the following formulæ:

Salicylate of bismuth	2 parts.
Calcined magnesia	2 "
Powdered willow charcoal	3 "
Oil of anise	1 part.

Of this powder a small teaspoonful may be taken an hour or a half hour before a meal. When gastralgia is added to flatulent dyspepsia, he recommends the following:

Syrup of peppermint	250 parts.
Hydrochloric acid	1 part.
Hydrochlorate of cocaine	$\frac{1}{50}$ "

of which a small glass (such as those in which liqueurs are served) may be taken after a meal.—*Revue Générale de Clinique et de Thérapeutique*, May 19, 1887.

Intubation of the Larynx at the Boston City Hospital.—Dr. Prescott, house surgeon, reports the following method of treatment by intubation at the above mentioned hospital:

The treatment has been the same as in tracheotomy, namely: light steam, stimulants, poultice over chest; Dobell's solution[1] as a throat spray. A solution of corrosive sublimate (1 to 15,000) was applied to nasal mucous membrane when there was any nasal discharge. Occasionally small doses of the bichloride of mercury were given. Tincture of digitalis, in small doses, was also given when the urine was scanty, and pepsin to assist digestion, when necessary. At first nourishment was given in enemata, but it was soon found that all the nourishment needed could be given by mouth, without difficulty. Semi-solids cause the least trouble. The first and last "swallows" are the ones that cause the coughing which is always set up, and so it is best to let the child take a mug of milk and drink it rapidly.

The advantages of intubation, as compared with tracheotomy are: 1. There is no wound, and therefore it will be allowed where tracheotomy might not be. 2. There is not added another source by means of which infection may take place. 3. It can be done more quickly. 4. It is less troublesome both in its performance and its after-care. 5. There is not as much discharge. 6. The shock is not as great. 7. No anæsthetic is needed.

The great disadvantage is that the parts below the larynx cannot be kept as free from mucus and membrane as in tracheotomy. Although the fact that intubation can be done more quickly has been put as an advantage, I do not wish to imply that it is a simple procedure. It is not easy, and should be done with a great deal of care and very little force. The statement has been made that it is easier to put a tube into the larynx than into the œsophagus; the experience at the hospital does not bear out the statement.

The method of inserting the tube, as done at the hospital, is as follows: The tube with the silk attached having been put on the obturator, the child should be held upright by an assistant, sitting in a chair facing the operator, with its head held firmly and a little forward. The gag is introduced on the right side and kept as far back as possible. The operator then introduces his left forefinger into the mouth and passes it downward and backward until he feels the epiglottis; he now passes the tube along the palmar surface of his left forefinger (keeping in the median line) until the tube reaches the epiglottis, when, by an upward movement of the right hand, he can easily put it in place. The left forefinger having been placed on the tube the obturator is withdrawn. After a few minutes, the breathing being quiet and the tube having again been felt in position, the silk suture may be removed, and the patient put to bed.

The number of cases is too small to be of much service in forming an opinion as to the relative value of intubation and tracheotomy from the standpoint of percentage of recoveries; for if the statistics of tracheotomy at this hospital are examined, the percentage of recoveries in any given six months will be found to vary from ten per cent. to thirty-five and even forty per cent.—*Boston Medical and Surgical Journal*, June 2, 1887.

An Application for Burns of the Second and Third Degrees.—

R.—Terræ albæ,	
Ol. olivæ	aā ℥ 7½.
Plumbi subacetat.	gr. ½.
Iodoform.	℥ 2 to 4.

Mix: Apply with a spatula, and cover with gutta-percha tissue or cotton, and a muslin bandage.—*Journal de Médecine*, May 16, 1887.

Transperitoneal Nephrectomy.—Terrier reported, at a recent meeting of the French Society of Surgery, two cases of nephrectomy in which he sutured both layers of the peritoneum to the anterior abdominal incision; the pocket formed by the removal of the kidney was thus drained anteriorly. He prefers the abdominal incision in large tumors projecting anteriorly.—*Gazette Hebdomadaire*, No. 12.

Use of Cocaine.—At a recent meeting of the Society of Therapeutics of Paris, Dujardin-Beaumetz reported his use of cocaine in the throat to render more easy gastric lavage. He had given it internally, in gastric disorders, in a solution of 1 to 600, two teaspoonfuls every fifteen minutes, to allay pain and vomiting. He had also given four injections, of half a hypodermatic syringe each, of a solution of 1 to 50, in the vicinity of the anus, and had thus obtained anæsthesia sufficient to dilate forcibly the sphincter without pain; a pledget of cotton saturated in the same solution may be placed in the bowel. In pleurotomy similar injections may be made at each extremity of a proposed incision.

All such injections should be given with the patient in a horizontal posture, to avoid syncope.

[1] Dobell's solution:

R.—Carbolic acid	℥ lxx.
Borax	ʒ j.
Boracic acid	ʒ j.
Glycerine	ʒ iss.
Water	ad Oiv.

He thought that as much as eight grains of cocaine could be given internally in twenty-four hours.—*Gazette Hebdomadaire*, May 6, 1887.

MIKULICZ'S METHOD OF DRAINING THE PERITONEAL CAVITY.—DR. FENGER, of Chicago, describes his use of the above method in cases reported in the *Journal of the American Medical Association*, of May 21, 1887:

About a year ago Mikulicz, of Cracow, proposed the following method of drainage, not only for retro-peritoneal cysts, which can be excluded from the general peritoneal cavity, by uniting them to the abdominal wound, but also for drainage in the peritoneal cavity itself. He takes a small piece of iodoform gauze, stitches a silk thread to the centre of it, and folds it up in the form of a pouch, the silk thread being inside, that the pouch may be drawn up from the bottom by it. The pouch is now pushed down to the bottom of the cavity, and if nooks and corners exist, it is pushed out so as to fill them completely. The inside of the pouch is packed with iodoform gauze, as much as is necessary to fill up these spaces completely. This is the advantage claimed by Mikulicz for his method of drainage as compared with the use of glass or rubber drainage. Besides the disinfectant properties of the iodoform gauze applied to the entire wall of such a cyst, Mikulicz states, as one of the advantages of his method, that, by the capillary attraction of the gauze, everything is brought out—fluids which a glass or rubber drain could not bring out. We must remember that when we drain the peritoneal cavity with a glass drain down between the intestines, or in the cavity of the cyst, we cannot always expect to get surrounding organs in so close contact with the drain as to drive out the fluid.

Further, there is this to consider: that a glass drain put down in the free peritoneal cavity has no tendency to bring out the fluid accumulated at the bottom; the intestines, filled with air, will simply swim in the fluid, and there is no pressure from without that will bring this fluid out of the glass drain, while the capillarity of the gauze is likely to help in that direction. I have had this remain in all these cases for about two weeks. As soon as the discharge ceases I commence first to pull out the loose gauze inside the sac. If a space is left after this has been pulled out, I press in at that dressing a little more gauze. This is gradually removed, and the pouch itself is then pulled out by the thread gradually and finally. In all my cases it came out about the end of the second week.

THE TREATMENT OF PAIN ABOUT THE COCCYX.—MÉNIÈRE, in addition to the relief of constipation and the use of counter-irritants, advises the following, in suppository, per rectum:

Ol. theobrom.	℥ 20.
Ex. belladonn.	gr. ¼.
Ext. hyoscyami	gr. ½.
Iodoform	gr. ¼.

To be used before retiring.

In severe coccygalgia he recommends the following:

Ol. theobrom.	℥ 20.
Ext. valerian.	gr. 1½.
Chloral. hydrat.	gr. 1½.

To be made into a rectal suppository which may be replaced, if necessary, by an injection of forty minims of

Adipis	ʒ 5.
Ext. valerian.	℥ 15.
Ext. belladonn.	℥ 8.
Chloral. hydrat.	gr. 15.

—*Gazette de Gynécologie*, May 15, 1887.

THE PERSISTENCE OF TYPHOID BACILLI.—FRÄNKEL, of Berlin, observed an interesting case in which a patient who had typhoid fever, had relapses at intervals of six weeks and four months, after which a fluctuating abdominal tumor developed. Aspiration gave pus and typhoid bacilli, cultures of which were characteristic. The case was regarded as one of inflammation produced by the persistence of the typhoid bacillus which had multiplied, instead of attenuating after the disease had abated, as usually happens.—*Gazette Hebdomadaire*, May 20, 1887.

THE MODERN TREATMENT OF URETHRITIS.—DR. BREWER, in an article in the *Journal of Cutaneous and Genito-Urinary Diseases* for May, gives his results of treatment as follows:

In conclusion, I think it may be fairly stated:

1st. That in uncomplicated cases of acute gonorrhœal urethritis, treated by prolonged and frequent irrigation with bichloride of mercury, recovery may be expected within two weeks; that this period may be considerably shortened by the early inauguration of treatment, by absolute rest, and by the avoidance of stimulants; that it may be indefinitely prolonged by irregularity in treatment, by inordinate physical exertion, and by indulgence in alcoholic and venereal excesses.

2d. That the retrojection of a hot solution of bichloride possesses all the advantages of the former procedure, and in addition causes a more rapid subsidence of the inflammatory symptoms, a greater feeling of comfort to the patient, and is attended with less annoyance and trouble.

3d. That in cases of acute non-specific urethritis, the favorable influence of each of these methods is strikingly apparent.

4th. That in cases of chronic purulent urethritis, no agent produces such rapid and permanent improvement as irrigation, especially when combined with astringents and heat.

5th. That the percentage of complications occurring in cases treated by these methods is far below that observed when the ordinary methods are employed.

TREATMENT OF CHOREA.—DESCROIZILLES prescribes as follows:

R.—Zinci valerian.
Ext. hyoscyami,
Bismuth. subnitrat. . . ãã gr. 15.—M.
Divide in pill 30 in number.

Sig.—From 3 to 6 pills daily.—*Journal de Médecine de Paris*, May 23, 1887.

ALMÉN'S TEST FOR SUGAR.—Of all tests for sugar in urine, Fehling's is undoubtedly the most satisfactory. The only objection that can be urged against it is the difficulty of preserving it a sufficient length of time, so

that unless recently prepared it may lead to fallacious results, owing to the solutions having a tendency to throw down the suboxide of copper spontaneously when heated. This, of course, is a great disadvantage to practitioners, who may be seldom called upon to use the test, and are at a distance from manufacturing chemists from whom they may procure a fresh supply. To remedy this Professor Almén, of Upsala, has improved the old bismuth test for sugar, and has prepared a solution which has the advantage of keeping unchanged for years, and being at the same time an extremely delicate test for sugar in urine. It consists of a solution of bismuth subnitrate, with caustic soda and potassio-sodium tartrate. In testing for sugar, the albumen, if present, must be first removed by precipitation by heat and acid, and one part of the solution treated with ten of the urine, when if sugar is present the bismuth will be deposited in a metallic state. The test is sufficiently delicate to detect sugar in the proportion of only 0.05 per cent. This test, as we have already said, is chiefly valuable on account of its preservative qualities, keeping well on board ship and in hot climates, though we doubt if it will supersede the use of Fehling's solution, especially as the latter is now supplied in hermetically sealed capsules which preserve the test for a considerable time.—*Lancet*, May 14, 1887.

Treatment of Ozena by Animal Grafting.—In a research upon "Animal Grafting with the Skin of the Frog, in Losses of Cutaneous and Mucous Substance," undertaken along with Dr. Dubousquet-Laborderie, Baratoux publishes observations upon ozena, atrophic rhinitis with ulcerations, in which he obtained a complete cure by engrafting the skin of a frog over the ulcerated surfaces. He has thus treated eleven patients having ozena and ulcerative non-specific rhinitis. In all these subjects he employed ten to twenty grafts, of which more than half have succeeded, and all the patients have derived much benefit from the treatment. He has always succeeded in obtaining a smooth mucous membrane. He takes the frog's skin from the interdigital membrane, the nictitating membrane, the belly, the lateral parts, by scissors, and places upon the raw surface with forceps, or by a special pipette (by blowing through the free extremity).—*Journal of Laryngology*, May, 1887.

Testing Menthol Pencils.—Mylius recommends testing the genuineness of the so-called migraine pencils by the following characteristics: The pencils should be of a coarsely crystalline structure, translucent, and not chalky. When scraped in water, the pencil should make the impression as if it were composed of a hard salt, and should not present a fatty or waxy appearance. If a small portion of the pencil be put into a narrow tube, and the latter be heated in a bath of diluted sulphuric acid, the mass should melt at a temperature at or below 38° C. (pure menthol melts at 36° C.). The whole mass of the pencil should melt at once, not successive layers from time to time. All substances used for adulterating the mass possess a higher melting-point, except some very low melting paraffines. But the latter are left behind, if the pencils are dissolved in alcohol.—*Technics*, May 3, 1887.

Thallin in Gonorrhœa.—Kreis and Goll have tested the effect of thallin upon the gonococcus and have found cultures of the germ destroyed by the drug. The sulphate in watery solution was used.

Staphylococcus aureus and anthrax bacilli were not affected by thallin.

After the internal administration of thallin the urine is strongly acid, and such urine undergoes ammoniacal decomposition much less early than urine ordinarily.

Injections of tartrate of thallin, 1 per cent., were well borne by the patients, but were without result. Solutions of $1^1/_2$ or 2 per cent. were but slightly irritant but showed good results. Decided improvement, however, followed the use of solutions of 2 and $2^1/_2$ per cent. in strength, with but slight irritation accompanying it.

In chronic gonorrhœa thallin gave good results when used immediately after the passage of a sound in solutions $1–1^1/_2$ per cent. in strength.—*Centralblatt für Chirurgie*, May 7, 1887.

A Common Antidote.—A poison antidote table says that equal parts of calcined magnesia, powdered charcoal, and hydrated peroxide of iron, in a sufficient quantity of water, is a general antidote for poisoning, for use when the poison is not known. It is a perfectly harmless and simple preparation.—*Technics*, May 17, 1887.

Carminatives and the Absorption of Gas by the Intestines.—Some experiments which were performed several years ago by Drs. Lauder Brunton and Cash, with a view to determine how carminatives act in relieving flatulence, have just been published. The gases used in the experiments were atmospheric air, carbonic acid gas, hydrogen, marsh gas, coal gas, and sulphuretted hydrogen. With the exception of one experiment the oil of cloves was the only carminative used. In each experiment they first tested the gases alone, and then again after the administration of the carminative. They found that little or no absorption took place when atmospheric air, hydrogen, coal gas, or marsh gas was used, and the addition of the carminative did not seem to increase the absorption. It was only in the case of carbonic acid that the carminative seemed to aid in absorption, and this was due probably more to the effect on the movements of the intestine than to direct absorption of gas. The oil of cloves caused a marked increase in the secretion of the intestine—a fact which, perhaps, explains the advisability of combining carminatives with purgatives. In regard to sulphuretted hydrogen, it was found that its absorption proceeded so rapidly as to produce even fatal poisoning, but carminatives did not exert much influence in increasing the absorption.—*Practitioner*, May, 1887.

A Useful Powder for the Treatment of the Uric Acid Diathesis.—Druitt is quoted by the *Journal de Médecine de Paris* of May 22, 1887, as prescribing as follows:

R.—Borac. pulver. . . . gr. 15.
Sodii bicarbon. pulv.
Potass. nitrat. pulv. . . . āā gr. 8.
for each powder.

To be taken 3 times daily in abundant fluid.

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SATURDAY, JULY 9, 1887.

THE CROWN PRINCE'S CONDITION.

(*Special Cablegram.*)

WE are in receipt of the following cablegram from Dr. Morell Mackenzie.

LONDON, July 7.

"THE last operation upon the Crown Prince has succeeded completely, and no projecting portion of the growth remains. Professor Virchow reports that the excised piece shows, even more clearly than the previous ones, as a hard, composite, warty growth, out of a moderately irritated and thickened surface. The base shows not the slightest ground for assuming the existence of a new growth penetrating into the tissue."

The above cablegram conveys most gratifying information concerning the present condition of the Crown Prince, and it effectually allays anxiety as to the grave possibilities which the earlier reports led the public to fear were involved in the case. It also fully confirms the favorable opinion which Dr. Mackenzie and Prof. Virchow had formed of the character of the morbid growth on the vocal cord, and justifies Dr. Mackenzie's belief, expressed at the first consultation in Berlin, in the feasibility of its successful removal by intralaryngeal operation.

THE SPREAD OF SCARLATINA AND TUBERCULOSIS BY MILK.

THE recent lecture of KLEIN before the Royal Institution of London, established beyond reasonable doubt the conclusions drawn from his previous researches and those of POWER, regarding milk as a medium of direct contagion in scarlatina. It will be remembered that for several years past the suspicion that milk might be the carrier of scarlatina and other diseases has been rife in England; but the epidemic of 1885, near London, and the exhaustive study made by Power at that time, have demonstrated conclusively that diseased cows at Hendon farm communicated to their milk a substance which caused the disease in those consuming it. It could not be ascertained where these cows became infected, nor whether those who bred or reared them were the subjects of disease. Upon the teats of the diseased animals ulcers, varying from a quarter to three quarters of an inch in diameter, were found, which were covered with a brownish scab, and had granulating, slightly indurated bases. Observation showed that small vesicles made their appearance on a reddened, greatly swollen teat, which became ulcers in a couple of days. As a rule, the disease affected the teats only, but sometimes attacked the lower portion of the udder also. Matter from these ulcers and their scabs produced a similar disease when inoculated in other animals. In this matter a streptococcus was found, whose cultures in agar agar and gelatine produced the disease by inoculation in calves, which revealed the lesions of scarlatina on post-mortem examination.

Klein's recent experiments embraced the inoculation of animals by virus obtained from the human being, and also from the animals at Hendon, and their results corresponded, both in gross and microscopic appearances, and also with the results of culture experiments with germs procured from both sources.

Among the interesting pieces of corroborative evidence was the finding of the micrococcus in a cheap quality of condensed milk, and the production of the disease by cultures of this material. The chain of proof was sufficiently strong for Klein to conclude that "The *micrococcus scarlatinæ* is the cause of human scarlet fever; that it produces in bovine animals a disease identical with the Hendon disease and human scarlet fever, and that while the cow is susceptible to infection with human scarlet fever, it can, in its turn, be the source of contagion for the human species." Contagious matter is introduced into the milk by pressure upon the ulcerated teats during milking.

Klein's report has led to earnest discussion in England, where the purity of food is a subject of constant study and legal supervision.

JAMIESON and EDINGTON, of Edinburgh, have recently made observations upon the scarlatina germ as obtained from the human subject. The blood was examined as early as possible in a case of scarlatina, and the presence or absence of the

germ noted. An area of skin was then selected, sterilized, and protected from contamination until desquamation occurred, when the rejected epithelia were examined for the bacilli. With cultures made from the germs found in desquamated epithelia they produced scarlatina in animals, whose blood yielded bacilli giving characteristic cultures. Their investigations have not been carried sufficiently far, as yet, to be compared with those of Klein; but are of great interest and value. While it is true that there are several vesicular diseases of cows' udders which are not always clearly differentiated, some of which may be innocuous to human beings, yet the chain of evidence offered by Klein leaves little room for doubt that the streptococcus he has found causes human scarlet fever.

An added danger in the use of milk from diseased animals was emphasized by a report given by GAUTIER to the French Academy of Sciences at a recent meeting. He has studied the transmission of tubercular infection by milk and cheese from tuberculous cows. He produced tuberculosis in rabbits by these materials; and after an extended series of experiments he concludes that not only tuberculous milk, but the substances made from it and used for food contain infectious matter. A human being may be inoculated with tubercle by consuming tuberculous milk in the form of fresh milk; curdled or "clotted" milk; fresh cheese; dried or salted cheese; or curds and whey. Fowls and pigs may be also inoculated by such milk, and he explains the frequency of the disease in animals partly on these grounds. He advises the greatest caution in the use by human beings of milk from tuberculous cows; and also that all milk fed to fowls and pigs be thoroughly boiled.

We may obtain an idea of the frequency of tuberculosis in cows from the statement by BLAINE and EDSON, of the Health Department of New York, that two per cent. of all animals slaughtered at the abattoirs of New York, and twenty-one per cent. of all milch cows, have tuberculosis.

MILLER, State Veterinary Surgeon of New Jersey, reports to the Bureau of Animal Industry at Washington, that tuberculosis is affecting cattle in eight counties of New Jersey; the number of herds reported being fifty-three. Finely bred cows, giving large quantities of milk, are most often affected, and frequent examples of heredity are seen. The meat of such animals, as well as the milk, is frequently sold, and is a ready means of contagion.

Systematic, thorough examination of all foods is a crying need. The recent opening of a model dairy near London, at which a number of distinguished medical men were present, indicates the proper attitude of the profession on this subject. Veterinary medicine is steadily advancing among us, and the vigilance of the law and the hearty cooperation of medical men are needed to close avenues of attack to the most deadly enemy of human life.

SANGER'S OPERATION.

THE application of the principles of conservative surgery to obstetrics has produced an operation whose results challenge consideration. A modification of the classic Cæsarean section, it deals successfully with the most serious complications of parturition. Since its first performance in 1880, out of 53 cases operated upon, 37 mothers and 47 children have been saved, a gain of 30 per cent. over the results of Porro's operation, up to that time the best procedure known. Nearly all these successes have been attained in the maternities of Dresden and Leipzig, where the operations have been performed by different men, but under one plan. While parts of this method had been used by others in various operations, yet Sänger is proved by his own writings and by the critical studies of Harris, to have first instituted and clearly defined the operation which bears his name.

Sänger's purpose, and his method of accomplishment, as stated in a communication to the *American Journal of Obstetrics* for June, 1887, will be found in the "Progress" columns of this issue of THE NEWS. The operation is to be done early; to be antiseptic; and eventration of the uterus, temporary compression of the lower uterine ligament by rubber ligature, and the details of ventrotomy are to be carefully observed.

The most frequent indication for the operation is contracted pelvis; and Credé, recently reporting the seventh successful case at Leipzig, in the *Archiv für Gynäkologie*, Band xxx., Heft 2, states that of cases of this kind operated upon 82.5 per cent. recover. A successful case at Erlangen is reported in detail in the same number by Döderlein.

In America 7 operations have been done; 1 mother and 4 children have recovered; mortality, mothers, $85\frac{5}{7}$ per cent.; children, $42\frac{8}{9}$ per cent. The successful operator is Lusk, of New York, whose case was reported in full in THE MEDICAL NEWS of May 7, 1887, page 527. These statistics contrast forcibly with the German, $88\frac{2}{10}$ per cent. of mothers having recovered, and $94\frac{1}{10}$ per cent. of children. The fondness of American obstetricians for efforts at forceps delivery in contracted pelves, and tardiness in operating, and lack of well-trained assistants, may be reckoned among the causes of this mortality.

Credé's report of the examination of the patient, two months after recovery, whose case he describes, is interesting: "I found the abdominal cicatrix a fine, straight line, without enlargement, freely movable in all directions; the aponeuroses and integu-

ment adherent. The uterus was entirely separated from the abdominal cicatrix; it was small, not sensitive, and freely movable. Menstruation had recurred eight weeks after recovery."

The great superiority in the results of Sänger's over the Porro-Müller operation indicates its performance in all cases demanding Cæsarean section, except those in which the uterus is in such a condition that its removal is imperative; as after prolonged labor, after exhaustion and unsuccessful attempts at instrumental delivery *per vaginam* had induced uterine atony and beginning decomposition.

For those who object to giving to an operation a personal name the title Cæsarean section, with multiple seroso-serous suture, has been proposed, and we think describes the essential characteristics of this operation.

THE CONTAGIOUS DIARRHŒA OF NURSING CHILDREN, AND ITS BACILLUS.

HAYEM recently reported to the Academy of Medicine some investigations which he had made to determine the nature of the contagious element in the diarrhœa of nursing children, and its most efficient treatment. He was led by the failure of general medication to prevent relapses, to order all bedding and linen of the little patients to be disinfected with bichloride of mercury, when he observed that the disease, which had become epidemic, was checked.

An examination of the dejecta showed that the greenish color present was dependent upon masses of bacilli and substances formed by them. Cultures were readily made of these microbes, and their behavior toward various antiseptics observed. The reaction of the matter in which they were voided he found was neutral or alkaline; and accordingly the effect of acids was tried. It was found that lactic acid, even in small quantities, destroyed the cultures made upon peptonized gelatine.

In doses of a teaspoonful of a solution of two parts to one hundred of water, given a quarter of an hour after nursing, and repeated from five to eight times daily, lactic acid gave excellent therapeutic results, surpassing naphthalin, iodoform, sulphide of mercury, and calomel.

Hayem concludes that altered gastric secretions, in the dyspepsias of nurslings, permit the microbes to enter the intestine with their germinating power undestroyed; and finding there an alkaline medium of growth, they increase rapidly. He considers that the dejecta, as received upon linen and bedding, contain the contagious elements. He has instituted experiments upon young animals with the cultures obtained from his patients, the results of which will be of interest.

VIGIER recommends in the *Gazette Hebdomadaire*, June 17, 1887, the following formula:

R.—Acid. lactici	. . . .	2 parts.
Syrup. simpl.	. . . .	98 "
Essentiæ citronis	. . . .	q. s.—M.

Filter.

Sig.—2 or 3 teaspoonfuls daily.

Koch has already shown, in his studies of the comma-bacillus of cholera, that they are killed by the lactic acid of the normal gastric secretion, and that it is when the activity of this physiological safeguard is interfered with or destroyed that the bacilli pass uninjured into the intestines, to multiply and produce the characteristic disturbances there. The effects of lactic acid upon these microbes, and the recent investigations of KOLISCHER, of Vienna, upon the tubercle bacilli as affected by phosphoric acid, suggest the acids as a class of germicides whose study promises information of practical value.

THE yellow fever at Key West appears to be on the increase. Three new cases were reported on Tuesday and three deaths.

DR. JOSEPH D. BRYANT, Professor of Anatomy and Clinical Surgery in Bellevue Hospital Medical College, has been appointed by the Mayor of New York a Health Commissioner, *vice* DR. Woolsey Johnson, deceased.

THE Gross Medical College has been organized at Denver, Colorado. It is the Medical Department of the Rocky Mountain University. It announces a collegiate term of seven months, beginning September 21st next. Professor Clayton Parkhill is Secretary of the Faculty.

REVIEWS.

A TEXT-BOOK OF MEDICINE FOR STUDENTS AND PRACTITIONERS. By ADOLF STRÜMPELL, formerly Professor and Director of the Medical Policlinic at the University of Leipsic. Translated from the Second and Third German Editions by HERMAN V. VICKERY, M.D., and PHILIP C. KNAPP, M.D., with Editorial Notes by FREDERICK C. SHATTUCK, M.D. New York: D. Appleton & Co., 1887.

UNDOUBTEDLY one of the best of modern text-books of medicine in the German language, is that of Strümpell, formerly professor at the Medical Policlinic in Leipsig. It is, therefore, with great pleasure that we welcome its translation into English by Herman F. Vickery and Philip C. Knapp, with editorial notes by Frederick C. Shattuck.

The translation is accurate without being too literal. There is no attempt to drag German idioms into the English language, but the English itself is idiomatic. The treatment has not been adapted to the United States

Pharmacopœia throughout notes giving the formula of distinctly German preparations have been added whenever necessary, and all measures except those of length have been changed from metric into English denominations.

The work is too large to give any detailed account of its contents. The chapters on acute infectious diseases occupy 109 pages; those on diseases of the respiratory organs 166, with other affections in a corresponding ratio.

Strumpell's text-book is probably most highly thought of for its chapters on the diseases of the nervous system; and the translators have increased the value of this portion of the work by adding foot-notes containing the results of investigations made since the last German edition was published. Numerous valuable and judicious notes by the editor are also scattered throughout the work, but not to an extent sufficient to interfere in any way with its individuality.

The therapy is not in all respects exactly that to which Americans are accustomed, but this fact is rather an advantage than otherwise, as tending to make us more cosmopolitan in our knowledge. It can be said with assurance that the purchaser of this text-book will not have cause to regret his investment.

L'Amputation du Membre Supérieur dans la Contiguité du Tronc. (Interscapulo-thoracic Amputation.) Par Paul Berger, Chirurgien de l'Hôpital Tenon, Professeur Agrégé a la Faculté de Médecine, etc. Paris: G. Masson, 1887.

Interscapulo-thoracic Amputation of the Upper Extremity. By Paul Berger. Paris, 1887.

With commendable industry Prof. Paul Berger, of Paris, has collated all the literature extant, bearing upon the subject of total ablation of the upper extremity and scapula, and has presented the results of his researches in the above mentioned monograph. So far as appears, the upper extremity and scapula have been removed fifty-one times, for various causes, such as tumors of the humerus or scapula, osteitis, and gunshot wounds, with a variable degree of mortality, about 20 per cent. succumbing after operations performed for the removal of diseased conditions, whilst 30 per cent. of traumatic cases die.

The operation has been performed eleven times in America, the first operator having been Prof. Dixi Crosby, of Hanover, N. H. The combined mortality from all operations is about 25 per cent., but probably the improved methods of antiseptic surgery introduced within recent years would materially lessen this mortality. The dangers to be apprehended are those incident to operations in the proximity of large bloodvessels, hemorrhage, entrance of air into the veins, and shock, and all are more or less preventable. Strange to say, the mortality after secondary removal of the scapula is equally as great as that of complete removal of the upper extremity and scapula at one operation. Not infrequently a large portion of the clavicle has been removed at the same time. Notwithstanding that cases of accidental separation of the upper extremity and scapula had been known since the time of Cheselden, it was not until 1808 that any surgeon deliberately removed these structures as a therapeutic resource. In this year, Ralph Cumming, an English naval surgeon practised for the first time the simultaneous ablation of the arm, scapula, and clavicle for a gunshot wound, the patient surviving. To anyone desiring information in regard to this useful but rare operation, we heartily commend this treatise, which is a complete study, historical, critical, and practical, of the whole subject.

SOCIETY PROCEEDINGS.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, April 30, 1887.

The Vice-President, Charles K. Mills, M.D., in the Chair.

Dr. Landon Carter Gray, of Brooklyn, read, by invitation, a paper on

SYPHILIS OF THE NERVOUS SYSTEM, AND ITS TREATMENT.

(See page 33.)

Dr. H. C. Wood said that there were only two points in this interesting paper on which he felt disposed to speak. First, with reference to the connection between migraine and epilepsy. This theory dates back especially to Trousseau, who, as we know, gave the name of epileptiform neuralgia to migraine. Migraine certainly does occur in epileptic patients, but he doubted if it occurs more frequently in this class than in the community at large. He could not remember to have ever seen an epileptic patient who also suffered with migraine, nor had he ever seen a patient with migraine affected with epilepsy. It is entirely possible for an epileptic discharge to be sensory occasionally, but he thought that true epileptic migraine must be exceedingly rare. In regard to the use of mercury, he was much surprised at the position taken. He fully agreed with the author as to the value of iodide of potassium in nervous syphilis. He had, however, never used it in doses as large as Dr. Gray mentioned. He rarely exceeds one-half an ounce, and he thought that three hundred grains in the twenty-four hours will accomplish all that a larger dose will. In cases where time is an element of importance, mercury will accomplish all that the iodide does, and do it in a shorter time. He recalled one case seen in consultation with Dr. Mills which brought the importance of time clearly before him. They were giving large doses of iodide of potassium, and the man was steadily improving, and undoubtedly would have recovered if he had not died as the accidental result of an epileptiform convulsion. The convulsions were becoming less frequent and less severe, but on one occasion the fit stopped his breathing a little too long, and he died.

Nervous syphilis may be an early manifestation of syphilis, and he thought that all syphilographers agree that early syphilis yields better to mercury than to iodide of potassium. Again, in advanced syphilis, in iritis, we know the effect of mercury in causing the absorption of gummatous deposits. It is unreasonable to suppose that gummatous infiltrations in one situation will have a different relation to iodide of potassium and mercury from that which they will in another. Brain syphilis is amenable to exactly the same treatment as syphilis of any other portion of the body. The brain element has

little to do with it. It is the syphilis we have to treat. Therefore, in all cases where the symptoms are very urgent, and where there is danger from the accidental interference with the function of a vital part, he thought that mercury should be pushed until ptyalism is produced. After that the iodides may be used. There also often comes a time in nervous syphilis when the iodide should be replaced by the tincture of the chloride of iron with the bichloride of mercury: twenty or thirty minims of the former with about one-twelfth of a grain of the latter. This will often effect a marked change within twenty-four hours.

Dr. Osler said that his experience with these affections has been somewhat limited. He has had considerable difficulty in determining whether an arterial lesion at the base of the brain was really a specific lesion, or whether it was an ordinary arteritis. He called to mind one case in which this difficulty arose. A man aged thirty years had the primary lesion eighteen months before his death. He had been treated for severe secondary symptoms and suddenly died from hemorrhage at the base of the brain. The first portion of the basilar artery was dilated and in a small region eroded and perforated. In the central portion of the basilar artery there was a nodular growth which partially obliterated a portion of the vessel. This was an early date for syphilitic arteritis to come on. The statistics of Heubner and others show that it is usually a late lesion of syphilis, although, as Dr. Wood has intimated, it may occasionally appear at an early date. In those instances in which, in addition to the arteritis, there is more or less meningeal thickening, there is less difficulty, although in one instance there was a doubt whether the lesion were syphilitic or tuberculous. In that case he thought that section of the arteries showed conclusively that the lesion was syphilitic. There are only two conditions in which we meet with fusiform nodular swelling of cerebral arteries—*i. e.*, in syphilis and tuberculosis. On section of the syphilitic nodules, the growth is always subintimal, and proliferation is entirely between the fenestrated coat and the endothelium, whereas, in the tubercular nodules, the infiltration is almost always adventitial. He had seen only one instance of multiple gummatous growths of the brain. In this case there were three growths attached to the meninges, varying in size from a marble to a large walnut. The remarkable comatose conditions which occur in connection with cerebral syphilis are of great interest. In one case in which there was a tumor of the brain, where the diagnosis of cerebral syphilis had been made by several neurologists, the periods of somnolence lasted from three to six weeks. He agreed with Dr. Wood as to the great value of mercury, particularly in the early stage of certain of these cases.

Dr. E. N. Brush said that his attention was first directed to this subject by an attack of nervous syphilis in a medical friend. Nervous symptoms came on seven years after inoculation of his thumb by the original lesion. Speaking from his experience in the treatment of syphilitic diseases in general, he was sorry that he could not agree with Dr. Gray in regard to the inutility of mercury in the treatment of nervous diseases connected with syphilis. He agreed with him in regard to the value of iodide of potassium in large doses, perhaps not, however, of the size he advocates.

Dr. Gray has briefly referred to general paralysis of the insane as due to syphilis. Some one has said that probably eighty per cent. of brain diseases occurring between twenty-five and forty are due to syphilis. He was unable to speak as to the correctness of this statement, or as to how often syphilis is productive of paresis, but in a large proportion of the cases of general paresis that he has seen there has been a history of syphilis. With regard to prognosis in paretics with syphilitic history, he has come to think that many of these patients live longer if we do not pursue a too active treatment. His plan has been to keep a mild course of what has been called mixed treatment—small doses of mercury with medium doses of iodide of potassium.

Dr. Wharton Sinkler, while he did not underrate the value of mercury, said that his preference has been for iodide of potassium. The use of mercury is attended with some inconveniences, such as diarrhœa and ptyalism, and he has seen its use followed by the breaking down of old sores. He agreed with Dr. Gray as regards the unfavorable prognosis in cases of locomotor ataxia from syphilis. Many think that because a lesion is syphilitic it will yield to antisyphilitic remedies. His experience is that locomotor ataxia, due to syphilis, is as untractable as locomotor ataxia not due to that cause.

Dr. Francis X. Dercum said that an interesting case which he has recently seen illustrates the point that locomotor ataxia, whether due to syphilis or not, should not be considered incurable. A case presented itself at the University Dispensary two or three years ago presenting the typical symptoms of ataxia to a marked degree. There was a possibility of syphilis, but no clear syphilitic history. He was at first placed on the mixed treatment and the iodide pushed without benefit. He was then given small doses of mercurials and this has been followed by marked improvement. The man is now able to walk without assistance. The element of time is often overlooked in these cases. After removing the infiltration of the nerve tissues, a certain time is required to permit the rebound of the depressed nervous tissues. Even when the lesions are cured the patient is not relieved of the profound impression made upon the entire organism and especially upon the nervous system.

Dr. J. Hendrie Lloyd had been unable to obtain any positive and definite views with regard to the relation of dementia paralytica to syphilis. The course of reasoning seems to be that because a patient with dementia paralytica has a history of syphilitic infection, therefore he has a syphilitic brain disease and the prognosis is favorable. This is a practical question, which has come home to this city in a very positive manner within the past few months, in the case of a prominent official. If we assume the case to be syphilitic, are there any characteristic histological or pathological lesions showing such to be the case? If we decide that a case of dementia is syphilitic in origin, have we a hopeful case for therapeutics? He thought that if we have the well-marked symptoms of dementia paralytica, we are justified in stating that the prognosis is exceedingly doubtful, whether the patient has had syphilis or not. In the autopsy of a well-known tragedian who had general paresis, he saw well marked the endarteritis described by Heubner; but there was in addition the evidence of a lepto-meningitis, or a cortical cerebritis,

as shown by marked opacity of the membranes and adherence of the gray matter to the pia mater, so that the cortex tore off with the pia. Dementia paralytica never depends merely upon an endarteritis of the large vessels, and this endarteritis might be difficult by itself to distinguish from such a condition as arises in gouty and other subjects.

Dr. H. C. Wood said, with reference to the points suggested by Dr. Lloyd, that he had come to some positive conclusions in his own mind, which have been verified by experience. In the case referred to, he said one year ago, that man had either brain syphilis, or dementia paralytica. We have, on the one hand, locomotor ataxia, due to sclerosis of the posterior columns of the spinal cord. In a large proportion of cases, this comes on in syphilitic subjects. The exact relation of the syphilis to the lesion is a matter of conjecture. The important clinical fact remains that if we have sclerosis, whether it occurs in a syphilitic or non-syphilitic person, it is not amenable to treatment. Dementia paralytica also occurs to a large extent in syphilitic individuals. We have, on the other hand, certain cases in which symptoms closely resemble those of locomotor ataxia, and are directly due to syphilitic alteration in the spinal cord, and are amenable to treatment. In another set of cases, the symptoms closely resemble those of dementia paralytica, but are really the direct result of syphilitic disease of the brain. We have these two sets of cases.

The practical point is, Can we in any given case determine whether we have the direct effects of syphilis or not? He thought that in the majority of cases a fair guess can be made. The symptoms of the syphilitic case are usually a little abnormal. For instance, he had a case resembling locomotor ataxia, but there were also epileptiform convulsions. He said this is a case of syphilitic disease.

So in apparent dementia paralytica, the man may have the delirium of grandeur, but he has other symptoms which do not belong to the true disease. This aberrancy from the usual type points toward syphilis. The only safe method is to give a guarded opinion.

Dr. W. D. Robinson had now under his care a case of locomotor ataxia in which the diagnosis was confirmed by a number of prominent clinicians. This case has rapidly improved under the use of hydrobromate of hyoscine. When he came under his care the paralysis was almost complete. In order to relieve the pain he was taking six grains of morphia a day and three pints of alcoholic stimulants. He began with $\frac{1}{200}$ of a grain of hydrobromate of hyoscine every six hours. At the end of the month the morphia was done away with and the alcohol was reduced to one pint. The suffering was greatly relieved. The hyoscine was gradually increased until its physiological effects were induced. The ability to associate volition and motion began to return, and at the end of three months massage and electricity were added to the treatment. He then began the use of mercury. The man is now able to stand alone and with assistance is able to make a few steps. He would ask if Dr. Gray has found that syphilitic nervous disease has had a tendency to induce an uncontrollable appetite for alcohol. He had seen two or three instances in which this was claimed to be the case.

Dr. Mills said that Dr. Gray had referred to the occurrence of cephalalgia with hemiplegia, and the disappearance of the headache on the occurrence of the hemiplegia in a certain number of cases. He had observed the same thing, and some years ago, in a clinical lecture, advanced a view for its explanation. Usually in these cases there is a syphilitic tumor connected with the membranes. As the growth advances, it obliterates, by pressure and inflammation, the vessels which go to the part and there is breaking down behind the growth. This relieves the tension, and thus the headache is relieved. He had seen cases where the post-mortem indicated that this was the correct explanation. With reference to paretic dementia, his experience has been that where the disease is well developed the prognosis is as bad in a syphilitic as in a non-syphilitic case. The case is probably incurable, although there may be remissions. More stress should be laid on the element of time and fine tissue change than has been done. Dr. Gray has called attention to the fact that whether the cerebral syphilis is of the nature of a gumma, disease of the membranes, or endarteritis, there are certain foci of softening from the obliteration of vessels. These cannot be replaced any more than absolute tissue loss can be replaced anywhere else. He believed that the prognosis is always bad where there was widespread disease of the blood-vessels. The cases of locomotor ataxia which are said to be curable, he believed were not cases of spinal sclerosis. Often they were not even cases of spinal disease. He had seen cases which were undoubtedly examples of cerebellar disease, and even of cerebral disease. Dr. Wood relies on the presence of aberrant symptoms as indicating a probable syphilitic origin. If you have such aberrant symptoms, the chances are that the disease is not in the spinal cord.

In the treatment of syphilis of the nervous system he used both mercury and iodide of potassium. There are at present cases in the Philadelphia Hospital which illustrate the rapid improvement that may take place under the use of mercurial inunction. After the case had advanced to a certain point under the use of mercury, his plan was to substitute the iodide. In the cases that have advanced very far the iodide was the best remedy.

Dr. Gray, in closing the discussion, said, with regard to the use of mercury, that he had seen over and over what he had stated in his paper, that cases of syphilis of the nervous system that do badly under the use of mercury do well under the use of the iodides. He did not deny that some cases possibly may be cured with mercury, but he has never seen such a case. The iodides will do all that mercury will do; they will do more; and you can rely on them when you cannot rely on mercury.

With reference to Dr. Wood's statement that migraine is very infrequently conjoined with epilepsy, his experience has been very different. He could readily recall eight cases in which epilepsy was conjoined with migraine. He would say that the most frequent form of epilepsy is that in which loss of consciousness is conjoined with clonic and tonic movements. Next in frequency he would place epilepsy associated with migraine, and petit mal last.

In regard to the diagnosis of the arterial lesions of

syphilis, he believed that in certain cases it is not possible to make the diagnosis from the microscopical appearances alone. The limitation of the infiltration between the fenestrated coat and the intima occurs in other forms of endarteritis. Unless something is obtained from the studies of the bacillus, he did not see how it is possible to make a positive diagnosis from the microscopical appearances alone.

Dr. Wood relies on the aberrancy of the symptoms as indicating that in general paralysis the condition is due to syphilis. We are not acquainted with the pathology of this disease, but we know that the lesions, whatever they are, are limited to the cortex of the brain and the overlying pia mater. The pia mater contains the bloodvessels which dip down and form anastomoses in the region of the pyramidal cells. Some German investigator claims that there are very fine commissural fibres within the gray matter of the cortex, and that the affection starts in these fibres. The symptoms of a typical case are somewhat like these: a man will have, at varying periods of time, inequality of the pupils. This is often difficult to make sure of. Then there will be tremulousness of the tongue and facial muscles; then a certain thickness of speech. Now we may get the delirium of grandeur, but in the majority of cases we do not get that in the early stages. We can get precisely these symptoms from other affections. They may be brought about by meningitis due to alcoholism, trauma, or by traumatism in a syphilitic individual. It is impossible in the early stage, unless we can exclude all other conditions, to make a positive diagnosis. He thought that in general paresis and in locomotor ataxia, a large proportion of the cases occur in syphilitic subjects, and that there is about the same relation between syphilis and locomotor ataxia as there is between certain infantile paralyses and the febrile disorders of childhood. They are post-febrile disorders; so these are post-syphilitic disorders.

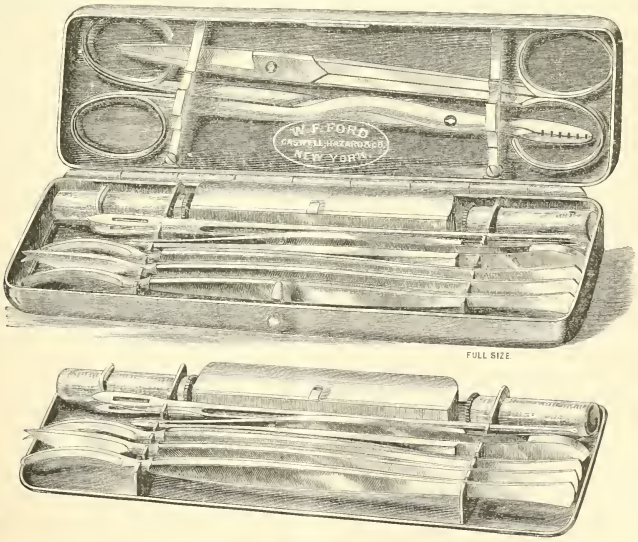
With reference to the induction of an appetite for alcohol by syphilitic disease of the nervous system, he had had no experience. He thought that the point made by Dr. Mills, that some of the cases set down as locomotor ataxia are not instances of this disease, is a good one. A German author recently gave the interesting history of a case in which there was syphilitic myelitis. The myelitis was peripheral, forming a narrow ring around the cord. This case presented many of the symptoms usually ascribed to locomotor ataxia.

NEW INVENTIONS.

AN ANTISEPTIC POCKET-CASE OF INSTRUMENTS.

BY ROBERT F. WEIR, M.D.,
OF NEW YORK

I HAVE been using, for nearly a year, an antiseptic pocket-case of instruments, and this time-test has fairly proven its usefulness. In this age of surgical cleanliness, it must have been brought home to many that the



FULL SIZE.

closed instruments in the ordinary velvet-lined pocket-case are hard to keep clean, and free from being possible sources of infection to a wound. This particularly applies to the case itself, which often becomes not only dirty in the ordinary sense of the word, but also contaminated with the hasty contact of blood- and pus-stained fingers in the various emergencies in which a pocket-case is used. I have long felt this blot upon my unexpected surgical work, and have at length overcome the main difficulties in the way.

The pocket-case now presented has been made under my directions, by Ford, of New York. It is of metal, and by the omission of such instruments as a hernia knife, gum lancet, etc., the purposes of which can as well be carried out by the more ordinary knives, it has been reduced in size until it now measures five and a half inches long, two inches wide, and only three-quarters of an inch in thickness. This permits it to be readily carried in the vest or hip pocket. The annexed woodcut shows not only the actual size of the case, but also its contents. These may be varied to suit the ideas of different surgeons. As before stated, I have found by actual experience, that my surgical demands upon it have satisfactorily shown its competency.

It contains, as will be seen, but three knives, a scalpel, a sharp- and a probe-pointed bistoury. These are made out of a single piece of steel, with small handles to lighten their weight. Should a larger handle be desired, the wooden handles plated over with nickel, as now used in Hamburg, can be best resorted to. Next is a fine-pointed pair of thumb-forceps, and beyond this is a slot in which rest two silver probes and a steel director curved and eyed at one end, to serve as an aneurism-needle. Two small bottles, with rubber corks, to hold antiseptic catgut and silk, with a box for straight and curved needles, make up the lower part of the case, which can be lifted out entire by the button at one end, and thus allows of ready access and cleansing, and also of immersion in a carbolic solution. I may here remark that the straight Hagedorn needles should be tried by every surgeon, if not already resorted to, because of their ease of penetration, and also because their large eyes permit the carrying of catgut better than other needles of similar size. The curved needles of the same surgeon are better known, and possess the same qualifications.

In the lid of the case are found a pair of scissors and a dressing-forceps; the blades of each are on a pivot-joint, and separable. The forceps combine three instruments in one: a dressing-forceps of the ordinary type, a hæmostatic forceps, and needle-forceps, the deep transverse grooves suggested by Dr. Abbe, making the best and simplest holder of the Hagedorn needle that we have.

This case, I am informed by Hazard & Hazard, can be furnished at eighteen dollars, being nearly the same as the price of the ordinary Russian leather pocket-case.

CORRESPONDENCE.

LETTER FROM FLORENCE.

A Porro-Cesarean Operation—Laparotomy Statistics.

I ESTEEM myself singularly fortunate in having had an opportunity to witness a "Porro" operation before leaving Florence, and although I cannot give such an account of the case as to render it of scientific value, I have no doubt that the new technique will be of sufficient interest to your readers to justify my describing it.

The operator was Dr. Giulio Kirch, a Florentine by birth but of German parentage, for three years an assistant to Prof. Chiara, and since recently settled in a neighboring town. I had an intimation of the case coming on and promise of an invitation but with slight hopes of being found. However, I was at lunch when the messenger came, and in a short while found myself in a small omnibus and on the way, packed in with instruments and apparatus, two female nurses of the hospital, and two young physicians, Dr. Martinetti, assistant of the Obstetrico-Gynecological Clinic, and Dr. Emilio Fasola, who was mentioned in my last letter as having had a successful Porro operation.

Landscape scenery does not usually enter into the report of a surgical case, but an exception may be claimed this time from the exceeding beauty of the ride. We crossed the Arno and beyond the suburbs began to ascend, the road winding up the mountain side, at every turn presenting delightful views over vineyards and olive orchards, of Florence, the valley, and the swelling hills and mountains beyond. It was like an Alpine ride except the lack of snow-covered peaks above. After reaching the summit we descended for quite a time into a valley as widespread, as undulating, and as beautiful as that of the Arno. At the end of about two hours and a half we turned into a country lane, and after driving through a vineyard stopped at a peasant's isolated house on the hillside where we found Dr. Kirch and a physician of the vicinity.

It required but slight examination to show that the exigencies of practice are just the same on one side of the ocean as the other. We ascended a rough stone staircase to a small chamber, under the brown rafters of which the operation was to be performed. The room was lighted by six panes of seven by nine glass. The floor was of large brick tiling about one-fourth of it so sunken that the given warning was not needed to keep us off it, and so to preserve us from precipitation to the room below. The furniture of the house was exhausted in preparing a table upon which to lay the patient and but one small stand could be had for instruments.

Soon all was ready, two spray apparatus were in operation, and the patient, under chloroform, was brought in from an adjoining apartment. She was a dwarfed young woman of twenty-four, unmarried, markedly rachitic from her short and crooked legs, but with a good country color in her cheeks. She had been in labor since morning—about ten hours. The abdomen was thoroughly washed with soap and solution of carbolic acid, the pubes shaved, and a vaginal disinfectant douche administered. I was kindly permitted to make an examination, but with the caution not to rupture the membranes. As I found them protruding well into the vagina, dilatation of the cervix being complete, of course I could not ascertain the character or extent of the pelvic deformity. The abdomen having been opened in the median line, from a little above the umbilicus downward, four sutures were passed through the walls at the upper part of the incision; these to draw the opening together and prevent escape of the intestines if necessary. The uterus was then carefully

palpated and an extremity of the child being recognized, the organ was incised. The hemorrhage at this period became very free, but not dangerous, although very much obscuring a view of the parts. The incision was rapidly prolonged, the membranes rupturing and liquor amnii escaping, and the child promptly extracted by the feet. It was a large, well-formed, male child, and after some vigorous treatment from the nurse, who received it from my hands, it began crying lustily. The uterus was now turned out of the abdominal cavity, the cervix above the vagina carefully made out, and a large needle armed with a strong elastic ligature was passed through it. Another large needle, unarmed, was passed through the cervix and left in situ. The ligature was then drawn tight around each half, the two strands being fastened by silk ligatures instead of being tied in a knot, the elastic ligature passed again around the whole pedicle and fastened in a similar manner. The upper three-fourths of the uterus containing the placenta was then cut away. This part of the operation took, of course, far more time than that of the removal of the child, and still more time was occupied in testing the accuracy of the ligatures and in cleansing the abdominal cavity, into which, however, but little fluid had entered. When all seemed satisfactory, the remnant of the uterus was trimmed down, that and the wound well dried and dusted with iodoform, and the abdomen closed, particular care being taken to approximate the edges with silk ligatures passed close to the projecting pedicle both above and below. The outside dressing was the same as described after ovariotomy, including the quilted pad with shot.

When the patient was placed in bed and had recovered from the chloroform, her condition was excellent; she had a good pulse, a good countenance, and no evidence of shock.

The selection in this case of the Porro operation instead of the improved Sänger method, was rather, so far as I could gather, with the view of future possibilities than anything else. The doctor recognized the Porro as the far more severe operation, and one far more difficult to perform. I will make arrangements before I leave to obtain information as to the termination of this case, and send word of the mother's fate. R.

FLORENCE, May 26, 1887.

Before leaving this city I am happy to be able to send word as to the result of the Porro operation described in my last. It has proved a complete success. The temperature never showed any considerable rise and on the tenth day, when last heard from, she was considered out of danger. The child also did well. This result is particularly gratifying under the circumstances, the surroundings of the patient having been sufficiently indicated, and neither of the trained hospital nurses having remained with her, care and attention of every kind devolved upon the doctor himself.

I am also able to give you the number of laparotomies performed by Prof. Chiara, in the hospital, during the years 1885 and 1886, with results. I expected to be able to give the different kind of operations, as ovariotomies, etc., but cannot do so. Still, the statistics are not without interest.

Number of operations	38
Number of deaths	6
Causes of death:	
Pelvic tuberculosis	1
Septicæmia	3
Vomiting	1
Hemorrhage	1

In the description of the ovariotomy it should have been stated that the pedicle, after having been ligatured, was thoroughly charred with the thermo-cautery. R.

FLORENCE, June 11, 1887.

NEWS ITEMS.

PASTEUR'S TREATMENT IN BELGIUM.—The report of a commission appointed by the Belgium Government to report upon the establishment of an institute for Pasteur's treatment, is adverse to such a proceeding.

THE PENNSYLVANIA STATE MEDICAL SOCIETY elected Dr. R. J. Levis, of Philadelphia, President for the ensuing year, and decided to hold its next annual meeting in Philadelphia on the first Wednesday in June.

VON LANGENBECK, the distinguished German surgeon, has been successfully operated upon, the second time, for cataract, by Dr. Pagenstecher.

THE SPREAD OF PASTEUR'S TREATMENT.—In a letter replying to von Frisch, of Vienna, written on May 29, 1887, Pasteur declares that there are fourteen "institutes" where his treatment is carried out daily.

THE MORTALITY AMONG NURSES IN LYING-IN HOSPITALS.—The investigations of DOHRN, of Königsberg, have shown that the mortality among nurses in lying-in hospitals in which clinical instruction is given, is two or three times as great as that in similar institutions to which students are not admitted. Contagion introduced by students is considered the cause of this mortality, and more stringent government regulation of the admission of students to the German hospitals is urged.

M. ROBIN.—At the meeting of the Paris Academy of Medicine held on June 7, 1887, M. Robin was elected to membership.

HINTS IN PEPTONIZING MILK.—DR. BURROWS advises as follows in the *London Record* of May 16, 1887: As to the addition of water in the peptonizing process, adding water reduces the quantity of casein in cows' milk to that of mothers' milk; and besides this, serves an important office, in that *it prevents the action of the milk curdling ferment.* If water be not added, the rennet ferment present would curdle the milk, and then subsequently digest the curd. But in this case milk may be peptonized too much, and a bitter taste will be present.

Soda.—As to the addition of sodium bicarbonate, besides imparting to cows' milk the slight alkalinity natural to mother's milk, it affords the pancreatic digestive ferments a fluid resembling in reaction that in which they are normally active. *It also prevents the milk, if not fully peptonized, from curdling when boiled, for alkali albumins are not precipitated by heat.*

Cold and Boiling.—It should be stated that in predigesting milk boiling is advantageously resorted to when a discontinuance of the process is desired. If a peptonizing powder be added to a pint of milk, with a quarter or half a pint of water, and the whole allowed to stand in a small pail of water as hot as the hand can bear, at the expiration of from twenty to thirty minutes the milk will be peptonized sufficiently. If the milk be *not* then set on ice or boiled, peptonization will continue slowly, and the casein finally be wholly digested. If cows' milk be boiled, at the expiration of, say twenty or thirty minutes of peptonization, the casein will assume, on the addition of acid, a flocculent, flaky character, not unlike mothers' milk. Boiling destroys all digestive ferments. From all that one can judge, the results obtained with peptonized milk are of a satisfactory nature.

Dr. Keith and his Method of Operating.—Dr. Senn describes, from personal observation, Dr. Keith and his methods as follows:

When we realize the limited hospital advantages which are furnished him in the Royal Infirmary, we must admire the man who can show such results. The victories which have been so dearly bought at the expense of health, and in all probability of a portion of life itself, are the most appropriate and lasting monuments of an unselfish life spent in the interests of the profession of his choice and suffering humanity. In the Royal Infirmary he has sixteen beds and only one nurse. His son, Skene, is his assistant.

His operations are performed in a small room heated by an open grate fire, and but poorly supplied with light. Only a few students are invited to the operations. The patient is placed upon a board, to which she is fastened with a strap across the hips, and hands tied to it on each side; the board rests with each end upon a table, the operator and assistant standing one on each side between the tables. The room is disinfected before each operation with chlorine gas. The abdomen of the patient and hands of operator and assistant are washed with a strong alkaline solution for the purpose of removing the fatty substances, which, according to Keith, are carriers of the septic germs. After thoroughly washing the parts they are disinfected with a weak solution of corrosive sublimate. Sponges are used over and over, cleansing them after each operation in warm water, and subsequently in an alkaline solution; they are kept for use in a five per cent. solution of carbolic acid. During the operation they are kept immersed in a two per cent. solution of carbolic acid. The spray he has abandoned, since he has suffered from repeated attacks of hæmaturia, and if anything the results have been better since. Instruments are well cleansed after each operation, and during the operation they are kept in the strong solution of carbolic acid. All adhesions are carefully separated and each bleeding point tied with catgut. Ovarian cysts are tapped with a large straight trocar just as soon as the peritoneal cavity is opened.

From the descriptions I had read of his treatment of the pedicle I had always been afraid to adopt his method, but after I had seen the method applied I became convinced of its safety. The pedicle is firmly compressed in his clamp, and two or more cautery irons heated to a dull red heat are applied for a sufficient length of time to heat the metallic plates of the clamp sufficiently to cauterize gently the compressed portion of the pedicle. The compressed tissue must be rendered "dry," and when this has been accomplished it looks like a transparent membrane. Some practice is necessary to graduate the heat for each individual case, but when properly done hemorrhage never occurs. Dr. Keith affirms that the tissues thus treated do not slough, but are speedily supplied with new bloodvessels. He has seen new bloodvessels in the cauterized portion of the stump after twenty-four hours. Before the clamp is removed each side of the pedicle is carefully seized with forceps which do not tear, and any vessel which might contain blood is separately tied. In the many hundred cases treated by this method hemorrhage was never observed—certainly the best argument in favor of the reliability of the method.—*Journal American Medical Association*, May 14, 1887.

An Analysis of 1000 Prescriptions.—Dr. Forrest contributes the following in the *Reports of the New York State Pharmaceutical Association* for 1886, as the results of investigations in his pharmacy:

In 1000 prescriptions prepared at my establishment I find that 428 different kinds of articles were called for. Of these 428 articles 293 are officinal in the U. S. Pharmacopœia; 83 are unofficinal—that is, not recognized by the pharmacopœia, but the knowledge of their formulæ and their manner of preparation is possible to all druggists. 52 are proprietary—that is, articles followed with the name of their manufacturer, and generally secret preparations.

Thus nearly 12½ per cent. of the articles were proprietary. Nearly 10½ per cent. were unofficinal, or over 31 per cent., or one-third of the different kinds of articles called for were not recognized by the Pharmacopœia.

There are 997 different articles in the U. S. Pharmacopœia. 704, or nearly 70 per cent. of these were not ordered at all, though it must be remembered that many of the 293 articles prescribed are compounds or manufactured from something else, and that many of the 704 not ordered are crude drugs that enter into the composition of the 293, or from which these are made.

The Result of Swallowing a Fork.—Dr. William Wilson, writing to the *Lancet* of May 28, 1887, from Florence, Italy, reports the following interesting case:

Cipriani, to whom you referred in a recent number, while imitating the exploits of a juggler in swallowing a fork, some sixteen years ago, allowed it to pass into his œsophagus beyond his control. After various attempts at extraction, made by himself, his friends, and his wife, he was, on the following day, transferred to the Ospedale de Santa Maria Nuova, where also all efforts at removal were unavailing. Several ingenious instruments were invented for the purpose, but failed. He remained in the hospital for five weeks, suffering more or less inconvenience, moral as well as physical, for the public were divided in opinion, some proclaiming him only a fool, others an imposter. A year or so afterward, having produced severe pain, hemorrhage, and other untoward symptoms, it was ascertained that the fork had effected its exit from the stomach, and passed into the intestines, accompanied with a relief to the more urgent

phenomena; motion, however, occasioned severe suffering. He now wandered from place to place, a subject of interest to some, of ridicule to others, till three or four weeks ago he was attacked by acute pleurisy of the right side, terminating in effusion, and was admitted into the Ospedale di San Giovanni di Dio. Recovering from this, attention was again directed to "the fork," which was discovered in the right iliac fossa, pointing obliquely upward to the left side. It was evidently fixed in this situation, for palpation effected no change in its position, and considerable enlargement could be detected in the immediate neighborhood. After long hesitation, he consented to an operation, which was performed by the distinguished surgeon Professor Rosati, aided by his skilful assistant, Dr. Catani. An incision was made extending from an inch and a half below the umbilicus perpendicularly down to the pubes, and after considerable difficulty the fork was extracted from the ascending colon, the blunt end pointing upward. There had been long and constant inflammation, as was proved by the great thickening of the bowel, adjacent tissues, and the firm adhesion of the colon to the abdominal parietes. The bowel was opened, the edges secured to the abdominal integuments, and the wound dressed in the usual way. The fork measured twenty-two centimetres, and presented but little erosion; for though the plating had disappeared, the extremities retained their original defined outlines. The time could not be calculated which it had taken in reaching its ultimate destination, but probably many years, judging from the condition of the surrounding textures. The patient bore the operation well, and was very anxious to secure possession of the fork as conclusive evidence against his detractors. There has been no fever or unfavorable symptom, and the wound is nearly healed, there remaining only a small fistulous opening communicating with the intestine.

CREMATION BY THE BOURRY SYSTEM.—The cremation society at Zurich, Switzerland, one of the best organized associations in the world, has adopted the Bourry system, which is described as follows: "Like Siemens, Mr. Bourry allows only heated air to communicate with the body. In both systems the corpse burns directly; no flame is to be seen singeing the body, but it burns itself by the abundance of hot oxygen which surrounds it. Bourry uses carbonic acid gas, prepared in a coke regenerator, for heating the crematorium. During the process of cremation he uses, mainly, chimney gases for heating the air before it touches the corpse, which allows a more economical use of the heat. It is of great advantage that the chimney needs to be thirty-five feet high from the base of the cellar, so that it is fully covered up by the building. The ashes fall, without being touched, by an almost automatically working apparatus into the urn. The dissolution of the body does not take place in the dark, unseen and uncontrolled, but the whole action is clear and open. Bourry and Venini place the crematorium, which has the shape of a sarcophagus, and which can be approached from all sides, in the midst of the hall in which the service is to take place. There is a little window on the back of the sarcophagus through which one can see the process of cremation, which is completed within one to one and one-half hours, without smell or smoke. The process is solemn and beautiful, and avoids every unæsthetic manipulation."—*The Sanitary News*, May 14, 1887.

WHAT HANDWRITING SHOULD CHILDREN BE TAUGHT?—Schubert, of Neuremberg, has made a careful study of various kinds of script, and the bearing which the use of each has upon the hygiene of the eyes among children, and the following are his conclusions:

As a practical conclusion to be drawn from his observations, Schubert lays down the rule that all children should be taught a perpendicular handwriting. Even if the erect median position of copy book be not actually better than the oblique median, still the teacher cannot tell when inspecting writing done at home what absurd position may have been adopted in writing it, if the child is permitted to write anything but perpendicular letters. These latter can only be executed in the erect median position. It may be possible for adults to write more rapidly a slanting than a perpendicular hand, but children are not required to write rapidly, but in a manner that does not tend to deform their vertebral columns or their eyes. In many countries now-a-days, and in times past, perpendicular handwriting alone obtains, and Schubert appends a series of fac similes of German handwriting in every century from the 8th to the 18th inclusive. From this it is seen that slanting letters were not adopted to any extent until the 17th century.—*Ophthalmic Review*, May, 1887.

SPONTANEOUS PURIFICATION OF RIVER WATER.—It is well known that rivers which in flowing through towns become charged with various organic substances, by degrees get rid of these impurities as they flow to a considerable distance. This can only be due to the oxidation of these organic matters, and M. Emich, who has studied the causes of this oxidation, arrives at the following conclusions. If pure water be left undisturbed, and in contact with atmospheric air, it is purified in the same time as it would be by being shaken in contact with the air. Ozone is not perceptibly quicker in action than ordinary air; if impure water be boiled and left in contact only with air deprived of germs by filtration through cotton, the organic matters will remain in it. If the deposit precipitated by water kept in contact with the air be mixed with water previously boiled, organic matter quickly disappears. The process of oxidation consists in the transformation of ammonia and its compounds into nitric acid and nitrogen. These facts show that the spontaneous purification of water containing germs results from the development of organisms, which act in the same way as the nitric ferment discovered by Schloesing.—*British Medical Journal*, May 7, 1887.

NUTRITIVE VALUE OF MUSHROOMS.—The prevalent idea (at least in Europe) that mushrooms are a food of no mean value, is not supported by facts. C. TH. MOERNER (*Schweitz. Wochenschr.*) has investigated the subject, and finds that only forty-one per cent. of the total amount of nitrogen may be considered as assimilable, and the nitrogen does not amount to more than about six per cent. of the dried mushrooms. He calculates, from the above data, that ten and a half avoirdupois ounces of *Agaricus campestris* are equal in nutritive value to only one average-sized hen's-egg; of

Polyporus ovinus, we need no less than four pounds; nine pounds of *Agaricus campestris* are equal to only one pound of beef; while of *Polyporus ovinus* it requires sixty-seven pounds.—*Popular Science News*, May, 1887.

DIMINUTION IN THE DEATH-RATE OF CONTINENTAL COUNTRIES.—At a recent meeting of the Society of International Statisticans, held at Rome, M. VACHER showed a diminution in the world's death-rate, as shown by the statistics of different lands. Taking France as an example, a mortality rate of 34 per cent. in 1770 became 24 per cent. in 1880; in Sweden 28 per cent. in 1760 was reduced to 17 per cent. in 1880.

M. BORDIO reported a steadily diminishing death-rate for Italy, since 1870: the result of improved drainage of marsh lands, and advances in national hygiene.

NOTES AND QUERIES.

MR. ERSKINE'S LINES ON DR. PHYSICK.

In the year 1792 Dr. Philip Syng Physick, of Philadelphia, received his degree of M.D. at Edinburgh. Upon its announcement Mr. William Erskine, the lawyer, afterward Lord Kinneder, wrote the following verses. In 1834 they appeared in "The Court of Sessions Garland," of Edinburgh, a work limited to one hundred and fifty copies

Sing Physick! sing physic! for Philip Syng Physick
Is dubbed Dr. Phil for his wonderful skill;
Each sick phiz he'll physic, he'll cure every phthisic,
Their lips fill with Philips with potion and pill

If music, as Plato does stoutly maintain,
In every disease be a sovereign thing
For calming the spirits and cooling the brain,
Be sure, Dr. Phil, when you physic, to sing.

Do! Physick! the college permits thee to work
In curing diseases the greatest of curses;
Syng! Dance! then with joy when thou think'st at one jerk,
Physick can empty both stomach and purses

What a fillip to physic if Philip Syng Physick
His skill in His quill to support him shall bring,
Of fever and phthisic, each master and miss sick,
Of Philip Syng Physick the praises shall sing.

Each grip in the science of physic to fill up,
Old Plochlus young Philip Syng Physick bestows;
The potion and pill of Phil still shall we swill up,
And Syng shall be sung at the close of the dose.

The physic of Philip sel sweetly to swill up,
Health, joy, and delight among mortals shall bring,
With pap and with praise, then, still Philip we'll fill up,
And Loud Io Paans to Syng ever sing.

O, Death! Since Phil physics thy triumphs are past
And broken thy dart is and blunt is thy sting;
Phil shall fill us with physic while Physick doth last,
And while Syng Physick physics, we'll Syng ever sing.

To each creature his own is the dearest and sweetest,
My host loves old stingo, and Iopas the bee;
Then Physick with physic sel Philip shall fill up,
And sung by Syng Philip philippics shall be.

When Philip's great son, as old chroniclers sing,
Fell sick, to great Philip[1] for physic he flung;
Then Philip with physic so fillipped the king
That physic and Phil by Timotheus were sung.

Now broke are Phil's pill box and Timotheus's lyre,
Let fame to my hero their blazonments bring,
Like Philip's great son he can bleed—in the sire,
Can physic like Philip, like Timothy sing.

[1] Philip was the name of Alexander the Great's physician.

Syng Physick for fees seeks the sick man to physic,
But unsought hopes the fee of his physic and skill,
To ne'er let Phil Physick of physic the fee seek,
Nor the sick man be fee sick of physic and Phil.

Let physic sing Philip, for Philip Syng Physick
From plain Philip Physick is dubbed Dr. Phil,
Sing Syng then, each patient, while Philip shall physic,
And Physick shall fillip with potion and pill.

That Apollo the god is of physic and song,
Each schoolboy, I think, will fully readily hollo;
Then since to his name the same arts do belong,
Be Philip Syng Physick our Magnus Apollo.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 28 TO JULY 2, 1887.

MCKEE, J. C., *Major and Surgeon.*—Granted three days' leave.—*S. O. 149, A. G. O.*, June 29, 1887.

BEALL, GEORGE T., *Captain and Medical Storekeeper.*—Granted four months' leave of absence.—*S. O. 150, A. G. O.*, June 30, 1887.

CHERBONNIER, A. V., *Captain and Medical Storekeeper.*—Directed to take charge of office and perform the duties of Acting Assistant Medical Purveyor, in St. Louis, Mo., during absence on leave of Captain George T. Beall, Medical Storekeeper, now performing those duties.—*S. O. 150, A. G. O.*, June 30, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 2, 1887.

DEANE, C. W., *Passed Assistant Surgeon.*—Ordered to the Naval Rendezvous, San Francisco, Cal.

HARRIS, H. N. T., *Assistant Surgeon.*—Ordered to the Naval Hospital, Mare Island, Cal.

GORGAS, A. C., *Medical Director.*—Remain on present duty until December 31, 1887.

CLEBORNE, C. J., *Medical Inspector.*—Remain on present duty until December 31, 1887.

MACKEY, BENJAMIN F., *Surgeon.*—Remain on present duty until December 31, 1887.

BROWNE, J. MILLS, *Medical Director.*—Will remain on present duty as member of Retiring Board, until June 30, 1888.

DEAN, RICHARD C., *Medical Director.*—Will remain on present duty as member of Retiring Board, until June 30, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING JULY 2, 1887.

ARMSTRONG, S. T., *Passed Assistant Surgeon*—Relieved from duty at Marine Hospital, Memphis, Tenn.; ordered to Marine Hospital, New York, N. Y., June 27, 1887.

PECKHAM, C. T., *Passed Assistant Surgeon.*—Relieved from duty at Marine Hospital, Wilmington, N. C.; ordered to Marine Hospital, Memphis, Tenn., June 27, 1887.

GLENNAN, A. A., *Passed Assistant Surgeon.*—Ordered to Revenue Cutter "Crawford," for temporary duty, June 30, 1887.

BROOKS, S. S., *Assistant Surgeon.*—Ordered to examination for promotion, June 27, 1887. Relieved from duty at Evansville, Ind.; ordered to Marine Hospital, at Wilmington, N. C., June 27, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

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ORIGINAL LECTURES.

CHOPART'S AMPUTATION.

An Extract from "The Address in Surgery" before The Medical Society of the State of Pennsylvania, June 29, 1887.

BY J. B. MURDOCH, M.D.,

OF PITTSBURG, PA.

ATTENDING SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL, PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE, ETC.

THIS operation is made at what is called the mediotarsal joint, between the scaphoid and cuboid bones in front and the astragalus and os calcis behind. The joint is situated about midway between the tarso-metatarsal articulation in front and the ankle-joint behind. These two being the points at which Hey's and Syme's amputations are respectively performed, the field for the performance of a Chopart is exceedingly limited, and the opportunities must necessarily be very few for its performance as compared with either of the others.

It is, however, an admirable operation in cases to which it is suited, and should be selected in those cases in which the disease or injury extends too far back to permit of the performance of a Hey's amputation, and still there is sufficient tissue left upon the sole of the foot out of which a plantar flap can be secured to cover the face of the astragalus and os calcis.

"Although an effort," says Hancock, in his lectures on the anatomy and surgery of the human foot, "has been made by Velpeau and others to fix the date for the first performance of Chopart's operation in the year 1746, and to give the credit to Hecquet, of Abbeville, for doing the operation, I have no doubt that the honor of originality has been justly awarded to Chopart. Boyer, a great admirer and supporter of Chopart, who speaks with the authority of personal knowledge, not only fixes the date as the 21st of August, 1791, but adds that "Chopart was so modest and disapproved so much of the practice, so prevalent nowadays, of proclaiming one's name in the journals, that it was only at his (Boyer's) express solicitation that he consented to his case appearing in Fourcroy's journal," which it did in 1792. In this case Chopart made two incisions, one on each side of the foot, extending forward from the astragalo-scaphoid and calcaneo-cuboid articulations. A transverse incision on the dorsum of the foot joined these two at their anterior extremities. The flap reflected back, Chopart cut through the extensor tendons and the dorsal ligaments. He next luxated the bones by depressing the front of the foot; and carrying his knife behind and below the bones, he cut from behind forward through the soft parts of the sole an inferior flap a little longer than the upper one. Secondary hemorrhage took place upon two occasions, but in spite of this the patient recovered and left the hospital on the 9th of November, or eleven weeks after the operation, able to walk upon the foot as well as on the other."

Probably few operations in the whole domain of surgery have had so many objections urged against them as the one now under consideration. Some of the objections are trivial, but one of great force is that the anterior tendinous attachments being necessarily cut off the gastrocnemius and soleus muscles draw the heel upward, in consequence of which the cicatrix becomes exposed to pressure in walking, and hence is liable to undergo ulceration. All surgeons of much experience have seen cases of this kind. It has been my fortune to witness two cases in which amputation at the ankle-joint was performed to remedy this difficulty.

Many good surgeons have expressed themselves as opposed to this operation. On the other hand equally good, if not better, authority can be quoted in favor of its performance. Mr. Syme was in the habit of performing it in preference to his own operation in all cases to which it was applicable. He never designed his own operation as a substitute for that of Chopart. Some time after he had devised the operation at the ankle-joint he said, "The operation of Chopart, which leaves only the astragalus and os calcis, is the most valuable of all the partial amputations, as it commands the largest portion of the foot requiring removal for disease or injury, and at the same time preserves a support for the patient not less useful than that which is afforded by the whole of the tarsus. Its introduction was long opposed on the ground that the extensor muscles of the ankle acting through the tendo-Achillis, when no longer antagonized, would draw up the heel and point the cicatrix to the ground. I performed this operation in 1829, and have frequently done so since with the most satisfactory result, no inconvenience having ever been experienced from the source just mentioned, as the cut extremities of the tendons on the forepart of the joint speedily acquired new attachments, enabling them to counteract the extensive power."

It is no wonder, therefore, that we see the greatest diversity of practice in this regard. In our great iron-mills and at our railroad centres so many feet are crushed under heavy weights, that amputation of the foot at some point is one of the most frequent operations the surgeon is called upon to perform, and it is of the utmost importance that all questions pertaining to the subject should be definitely settled. In this connection the following case is of interest:

CASE.—Robert G., mulatto, twenty-two years old, was admitted to the Western Pennsylvania Hospital, January 31, 1884. Patient had been found lying near the track of the Lake Erie Railroad twenty miles from the city. While in a state of intoxication he became sleepy and had lain down beside the track. The night was intensely cold, and it is presumed that he was out all night. When he was brought to the hospital it was found that the anterior portions of both feet were frozen.

A line of demarcation soon formed upon both feet. On February 6th (one week from admission) the question of amputation was considered. Quite a number of surgeons were present besides the resident physicians of the hospital, and while there was a unanimity of opinion as to the propriety of amputation, there was a difference as to the point at which the amputation should be made. The lines of demarcation were oblique; they were the same upon both feet, the tissues being destroyed to a greater extent upon the dorsal than upon the plantar surfaces. Syme's and Chopart's operations were fully considered. Those who advocated the doing of Syme's amputation asserted that the result in Chopart's operation was always doubtful, and that especially in a case like this, where both feet were implicated, it should not be attempted. After a full consideration of the subject it seemed to me that this was a case especially favorable for Chopart's operation. Good flaps could be secured from the soles of the feet, and I felt confident, from the experience which I had had in previous cases, that I would be able to prevent the pulling up of the heel.

Chopart's amputation was accordingly performed upon both of the feet; there being no skin on the dorsal surface of either foot out of which to form flaps, the medio-tarsal joint was opened in both cases directly from above, and a sufficient flap obtained from the plantar surface of each foot to cover the bones. The arteries were twisted, the wounds held together with silver wire sutures and adhesive plaster and a dressing of dry oakum applied. To prevent the drawing up of the heels, a subcutaneous tenotomy was performed upon both tendones-Achillis and a sole-leather splint accurately moulded to the back and sides of each leg, extending down upon the heels. In this manner the ankle-joints were kept well flexed. The dressings were not disturbed until the fourth day after the operation, when the wounds were found to have united through

their whole extent, with the exception of about half an inch on the right foot. During the time the patient remained in bed the heels were kept well extended by the sole-leather splints. He was able to get upon crutches at the end of four weeks, and was discharged from the hospital April 2d, sixty-three days from the date of admission. I did not see this patient until June 1, 1887, three and one-half years from the date of the amputations. The result did not disappoint me. After his dismissal from the hospital the patient informed me he continued to wear the splints which had been moulded to his legs at the time of the operation for three or four months, when he discarded them, and has since worn nothing but a pair of ordinary leather gaiters laced in front. He keeps the front of his shoes stuffed with cotton or some other soft material. He is engaged as a cook in a boarding-house; he is able to walk to his home, a distance of four long city blocks; he frequently walks down town to the post-office and back, a distance of two miles, with no other assistance than an ordinary cane. He is able to flex and extend both ankle-joints with perfect ease and to their full extent. He asserts that his feet give him no pain, and that he would much prefer to have them as they are than to have them off at the ankles. In this opinion all who have seen him walk must agree, unless, indeed, it would be the artificial limb manufacturer. I show you these plaster casts taken of his limbs a few days ago; also these woodcuts taken from photographs. The fact that the patient is a negro will explain the prominence of the heels.

This case is of interest from the fact that the operation of Chopart is an exceedingly rare one as compared with the other amputations of the foot, and it is of importance for the purpose of settling conflicting opinions in relation to it. It is also an important case from the fact that it is the only case, so far as I have been able to learn, where the operation has been done upon *both of the feet*.

The fact that this patient is able to walk with no other assistance than an ordinary cane, and has been doing so for more than three years, speaks volumes in favor of the operation. It shows the value of the stump as a support for the weight of the body and as a means of locomotion more clearly than could be shown by many cases where the operation was done upon only one foot. This is a very severe test of the operation. When one foot only is lost a patient is able to help it by throwing most, if not all, of his weight upon the other foot, but when both are gone, each foot must bear the brunt, and do its share of the labor. For this reason it is rare to see a man who has lost both of his limbs walking without the aid of a crutch (artificial limb manufacturers to the contrary notwithstanding), and when one is found who does so, he usually uses two canes, and, in order to keep his balance, extends his arms to their full extent, and walks in a shuffling, ambling manner, much different from the manner in which my patient walks.

I could state other cases of Chopart's amputation which have come under my observation, where the result was much better than it is possible for any of Syme's amputation to be.

I know a gentleman in Pittsburg whom I meet daily on the street; he is an active young man of twenty-two years of age. Nine years ago his right foot was traversed by a car wheel, crushing the foot up to the instep. For this injury his foot was at once amputated by the method of Chopart. Few who meet him on the streets suspect that there is anything the matter with his foot. There is a spring and elasticity to his tread which

I have never seen in any one who has suffered a Syme's amputation, and which I believe it impossible to obtain by any artificial contrivance in a case where the ankle-joint is lost. This man is a salesman in one of our largest and most busy retail stores; he is on his feet all day actively engaged in waiting upon customers; he walks to and from his home in the suburbs of Allegheny, a distance of two miles, from his store; he is a good dancer, and few of his companions can equal him as a pedestrian. It is proper to state that this man wears an artificial appliance upon his foot.

From my experience in these and other cases I feel justified in recommending Chopart's amputation in all cases to which it is applicable. It is not pretended that it can take the place of a Syme's amputation. Where there is not a sufficiency of healthy tissue to obtain a good flap from the sole of the foot, the operation should never be attempted. The flap upon which the patient is expected to walk should never be made from the tissues upon the dorsum of the foot. The skin over the instep cannot be made to bear the pressure of the weight of the body without ulcerating and causing pain. The dorsal flap should, therefore, always be short. Another reason for making a short dorsal flap, or no dorsal flap at all, is, that by so doing the tendon of the tibialicus anticus muscle and the tendons of the other flexor muscles of the foot are cut short, and for this reason when they become attached in the cicatrix are the more likely to keep the foot flexed, and thereby counteract the extending force of the gastrocnemius and soleus muscles. When, however, a sufficient amount of good flap can be obtained from the sole of the foot, no surgeon should do a Syme's in preference to a Chopart's amputation.

Many of our best surgeons are in favor of the operation. They do it in all suitable cases. It is fair to conclude that those who fail should charge their failure to the fact that they have done the operation in cases to which it was not applicable, or to a want of proper management in the after-treatment of the case. It is in the art of surgery as in other arts, those who fail in methods where others succeed should charge the failure not to the method, but to themselves. In cases where there is a sufficiency of plantar flap and the ankle-joint is kept well flexed during the after-treatment of the case, there will be no failure. To accomplish this it is prudent to divide the tendo Achillis subcutaneously at the time of the operation.

Mr. Delagarde, of Exeter, England, advises that in sewing up the flap after the operation the tendon of the tibialicus anticus muscle should be transfixed by one of the sutures. He relates three consecutive cases in which he resorted to this procedure which were entirely successful. He asserts that as the wound healed the tendon became firmly attached to the cicatrix. This seems to me to be an excellent suggestion, and is one which I shall in future adopt.

With regard to the mortality after Chopart's amputation, the statistics would indicate that they are about the same as after Syme's amputation, viz., seven per cent. But Chopart's is an operation so seldom resorted to, and the statistics have been so imperfectly recorded, that they are of little value. I think it is fair to infer, on general principles, that the part removed in a Chopart's amputation being not more than half of that removed by a Syme's, that the danger to life cannot be as great.

In conclusion, let me say that the principle for which I have contended is the same as that which has governed surgeons for hundreds of years in their amputations upon the arm. It is the same principle which Mr. Syme established fifty years ago for the leg, viz., *that amputations should be made as far from the trunk as possible*. This principle is as good for the foot as it is for the arm or leg, and, therefore, we say that the surgeon who performs a Syme's amputation when he might do a Chopart's, or a Chopart's where a Hey's would answer, increases the risks and unnecessarily mutilates his patient.

ORIGINAL ARTICLES.

STRICTURE OF THE URETHRA IN WOMEN.[1]

BY ELY VAN DE WARKER, M.D.,
OF SYRACUSE, N. Y.

IN view of the great frequency of diseases of the urinary organs in women, and in consequence the very thorough study that has been given them, it is extraordinary that so little attention has been directed to stricture of the urethra. All the great systematic writers, who are unquestionably thorough in all else, are silent, or treat worse than silently, a matter that I have reason to believe to be of great importance.

As instances of this, notice the following: Thomas, in his fifth edition, does not mention the subject. Emmet says that it is rare, except as the result of violence. Among older English writers, Churchill, who had such a wide experience, and could relate it so graphically, says, "My own experience does not qualify me to speak as to the frequency of organic stricture of the female; it cannot be very common, or I should have met with it. But I have met with two cases which I suppose to be spasmodic stricture;" and which cases he relates, and which were evidently cases of hysterical retention. West does not mention it, neither does McClintock; Sir C. M. Clarke gives it no place. Graily Hewitt says it is very rare compared to the other sex, and dismisses the subject in eight lines. Barnes ignores the matter, and Tait finds it unworthy of mention. The later French authors do not give it any consideration, so far as I have examined. The elaborate and painstaking German authors give it equally scant treatment. Beigel makes no mention of the subject; and Winckel, in a special treatise on the "Urinary Organs of Women," in the *Handbuch der Frauenkrankheiten*, gives it but a very scant space. Hart and Barbour do not mention the subject, except as atresia due to fistula. Skene, in his work on the *Diseases of the Bladder and Urethra in Women*, says that it occurs often enough to demand attention, and claims for it certain consideration due to its peculiarities in women. Mainly, its causes are the same in both sexes; the deposit of inflammatory products beneath the mucous membrane, which by gradual contraction constrict the canal. There

[1] Read before the Medical Association of Central New York.

is nothing here that differs in either sex, but he says it "may be produced by bands of scar tissue formed in the anterior vaginal wall and stretching across the urethra." Vesico-vaginal fistula may also cause it, and which we may call the stricture of habit. In the next sentence he makes what I believe to be an error. "The form of stricture that will most frequently come under your observation," he says, "will be a contraction of the meatus urinarius, produced in many cases by the too liberal use of caustics in the treatment of abnormal growths at the lower end of the urethra, or from vulvitis." Now if there is any point at which stricture in the sexes differ, it is the extreme frequency with which we find contraction of the meatus in the male and its rarity at this point in the female. Abnormal growths of the orifice of the urinary passage in women are exceedingly common, and when present, with very rare exceptions, they cause dilatation of the opening, which will not be more than compensated for by the action of caustics; but I believe that caustics are as rare in the treatment of these growths at the meatus as is stricture at this point in women. I have never seen a vulvitis treated by caustics to such an extent as to cause a slough, and without that, stricture would not result.

The subject upon which the greatest importance should be placed is given very doubtful treatment by Dr. Skene. Concerning the diagnosis, the directions are to explore the passage with the sound, using one so large that it will not pass the stricture, and thus locate it, and then by using a sound that will pass through it the extent of the obstruction can be known. If a writer upon male stricture were to direct such a method of exploring the passage, there would be very few strictures of large calibre, as Otis calls them, that we would ever know much about.

I have given extra space to Dr. Skene's very excellent treatise, because it is the only one of importance in our language, and if such an author treats a subject lightly, or in a way to prolong the period of error, we may dismiss any further consideration of those who are regarded as authority. Among the special journals the subject has been given more attention than in the text-books, and it is not an unusual thing to find the report of cases of stricture of the female urethra, and particularly has this been true for the last few months, with the result of a gradual awakening to the fact that an important pathological condition has been nearly overlooked.

The systematic gynecological writers are all wrong in their estimate of the importance and frequency of stricture of the female urethra. As the result of my own individual experience, I believe that it is as frequent as a like condition in the male, and the consequences to one sex are as serious as to the other. If this be true, it is an important matter, and each individual experience ought to be made available to correct the omission.

Now there was a time within the memory of many among us when it may have been said that in an exact and scientific way we knew very little about stricture of the male urethra; and yet, concerning this, important and careful instruction had been given for generations. There came, however, with the use of instruments of precision, a period of more exact examination, which not only gave us more perfect but a far wider range of knowledge. By these means could we study the pathological condition of the urethra within the living subject, but an abnormal state was all but discovered, and its morbid outcome given its due value, for, previous to this, strictures of large calibre were, if known, given no practical importance. Up to this period the general surgeon gave about the same instruction concerning the diagnosis of stricture of the male urethra that Dr. Skene has given in the same condition of the female passage. It cannot be disputed that, so far as stricture in women is known and treated, it stands to day where the surgery of the male urethra did half a generation ago. I date the knowledge of stricture in the male, of large and small calibre, their number, location, and extent, their consistency and dilatability, together with the calibre of the passage yet in a normal condition, to the invention and general use of the exploratory bulbs and urethrometer.

If we trust in urethral exploration in women to the sound, we simply learn that we have to deal with a narrowed passage, and we overlook strictures of large calibre entirely; whereas, if we explore with the bulbs, we learn all that the sound can reveal, but also the extent, number, and location of the constricted points, their firmness and dilatability, and the differential diameter of each.

Dr. Skene, in common with the very few writers who have given any description of urethral stricture in women, appears to derive his standard of comparison from stricture in the other sex. To a certain extent no comparison is possible. Except as the result of traumatism, the impervious urethra, or exceedingly narrow stricture, is not met with in women, but this form is quite common in men. Further, a narrowing in men that will cause but slight diminution in the current of urine, never retention, and but rarely dysuria, will result in all these symptoms in women. I believe this to be the true distinction to make between the sexes in the pathology and symptoms of stricture. Of course, women are exposed to all the etiological conditions that men are, plus a few others, incidental to their sex, but these in no way contribute to what may be regarded as sexual differences in results. From whatever cause, retention, incontinence, and dysuria are symptoms much more frequently met with in women than in men, and in consequence slighter pathological changes will cause more active disturbance in the former. If strictures of large calibre have the pathological importance in men that such an accurate observer as Dr. F. N. Otis assigns to them—and there can be no doubt of the truth of his observations—strictures of like character have still more serious import in women.

It is not necessary to reason any further from analogy. I am able to appeal to facts to establish the truth of my position. A long established method of treating dysuria in women has been by forcible dilatation of the urethra, an operation usually made with the finger of the operator. I had so treated

these cases of painful urination many times; sometimes with success, at other times with failure; but it appeared difficult to explain the contradiction in result. I have now learned that when I succeeded in relieving my patient I had to deal with a stricture of large calibre—in other words, I had treated a stricture by what, in the surgery of the male urethra, we would call divulsion. Since I began habitually to explore the female urethra with the bulbs in all cases of bladder disturbance, I have never made the operation of forcible dilatation, except in those cases in which a large sized bulb, say Nos. 24 to 27 F., has demonstrated the presence of constricting bands, with the result of making the operation much less frequently but with more uniform success. In forcing the finger into the urethra I have frequently felt the narrow constricting bands, but without really understanding their nature until I had studied the condition of the passage with the Otis bulbs. It is impossible to detect strictures of this size by the sound, as resistance is at every point alike; and from the size of the sound that you are able to pass, it does not appear that any stricture is possible. Free as was the opening of the urinary passage, the widely dilatable constricting bands were sufficient to keep up a constant fret of the mucous membrane. This, I believe, constitutes a sexual trait in the different reaction of stricture of this character in the sexes; that which will cause frequent and painful urination in women, and greatly dispose to spasmodic retention, simply, as a rule, causes an intractable urethral catarrh in men.

It is remarkable how sensitive the bulbs are in detecting and locating strictures of wide lumen. Sometimes the constrictions are arranged in series, and a No. 24 to 27 bulb will slip along in a series of jerks that offer but the slightest resistance to the hand; but more usually one or two of these bands are found located at the middle or upper portion of the urethra. The lumen of the normal female urethra is not the same throughout its length. It is contracted toward the meatus, expanded in the middle portion, and narrows again as it approaches the bladder. The use of the urethrometer proves this. One must not, therefore, allow error to occur from the introduction of too large a bulb, and which would move with more freedom at one portion of the urethra than another. The sensation of meeting and passing one of these bands is so characteristic and unmistakable that there is but little danger of error.

I am not prepared to give an opinion on the etiological relations of these large strictures. They differ in one important particular from obstructions of the same diameter in the male. In women they occupy but a small space longitudinally of the passage, while in men a half to one inch is sometimes involved. All the symptoms evoked by strictures of more contracted diameters are observed in those I have been describing.

In those cases in which the lumen of the passage is greatly reduced, I know of no way to differentiate them by the degree of functional disturbance from the first variety. I have made it a part of the routine examination of a patient to explore the urethra by the Otis bulbs, and as much a matter of course as examination by bimanual palpation or examination by the rectum. This I have practised for about three years, with the result of inducing me to reject the usual teachings of the systematic authors, and to believe that stricture of the female urethra is a frequent condition. Symptoms of functional disturbance due to stricture have their periods of exacerbation and intermission, so that the patient will give a history of difficult or painful micturition with intervals of relief.

In strictures of small dimensions, if the obstruction is sufficient to diminish the stream, this symptom, of course, persists, but even here it is subject to varying degrees of intensity, amounting occasionally to retention, while it is possible to introduce a fair sized catheter. I have observed the same symptom in the male, and in which the retention could be relieved by a No. 20 F. catheter. In women it is not safe to regard every case of urine retention as hysterical until, after a urethral examination by the bulbs, the passage is shown to be free from strictures, large or small.

The most contracted urethra I have met with offered firm obstruction to a No. 16 F. bulb. It was situated about half an inch from the meatus. She had complained of urinary difficulties for about eight years, and been treated for urethritis and cystitis and disease of the kidneys by a great variety of physicians. She was forty-seven years old, and about ten years before had had gonorrhœa, and to which I attributed the stricture.

I never saw but one case of contraction at the meatus. The subject was sixty-two years old, the mother of several children, and had suffered quite a number of years from difficult and painful micturition. A No. 19 bulb could be passed with difficulty through the meatus; another stricture slightly larger was found half an inch further up the passage. I divided the meatus, as dilatation at this point was exquisitely painful, even after using cocaine. The division was made upward—just the reverse of the direction in which it is made in the male. From the thickened and inverted prepuce, the hypertrophied right nympha, with its hardened and corrugated surface, and the general pigmentation of both nymphæ, I suspected long continued masturbation, although the social position of the patient forbade any questioning upon the subject.

I do not propose to take up your time with illustrative cases, and have alluded to these only as possible proof that like causes operate in both sexes. Senile stricture and stricture at the vesical neck are met with, and are extremely unsatisfactory to treat.

As I have consumed my allotted time, I can only briefly notice the treatment. Of course, the bulbs are not used for the purpose of dilatation. I make use of graduated steel sounds, the same that I used when in general surgical practice to treat male stricture. The action is twofold—to dilate and to cause gradual absorption of the constricting exudate. In strictures of large size, forcible dilatation or divulsion may be used: but I doubt the utility of this method in rigid strictures of small dimensions, as I

believe it would be found necessary to supplement the operation by the use of the sound to prevent contraction. The treatment, made two or three times a week, extends over a considerable length of time—from two to three months: but the relief given to the patient early by the use of the sounds is very satisfactory. As dilatation of the urethra is no more important than the absorption caused by their use, the latter implies a more or less prolonged treatment.

I believe any one can verify my position upon this subject by the habitual examination of the urethra with the exploratory bulbs in every case of pelvic disease that presents itself for treatment. The usual practice is not to explore the urethra, except when urinary symptoms are present, and then either by the sound or by some form of urethral speculum. My own experience is that one may learn more by the thorough way in which you can *feel* the conditions of the urethra by a properly selected bulb than by seeing. Speculum or endoscopic examination of the female urethra is a very unsatisfactory method compared to the touch. Here, as in other pelvic diseases of women, the gynecologist ought to make his diagnosis by the touch. As women are extremely sensitive in the urethra, cocaine should be used both in examination and treatment. In the examination the solution ought to be employed of full strength —5 per cent.—as the passage of the bulb is much more painful than that of the sound.

BASE-BALL PITCHER'S ARM.

POINTS IN ITS ANATOMY, PHYSIOLOGY, PATHOLOGY, SYMPTOMATOLOGY, AND TREATMENT, TOGETHER WITH SUGGESTIONS AS TO ITS PROPHYLAXIS.

BY A. H. P. LEUF, M.D.,
OF PHILADELPHIA

WHILE we have regularly made the acquaintance of the "tennis arm," "bicyclist's prostate," and other allied conditions, only a small proportion of the profession know anything about the disability of base-ball pitchers. As a rule, only those of us who take an interest in the great national game have heard from time to time of the total disability from overwork of some of the best pitchers.

The importance of a knowledge of this class of ailments can readily be appreciated from a monetary standpoint when it is remembered that good pitchers have salaries ranging from two thousand to four thousand dollars for a season's work of six or seven months, with but from one to three working days in the week.

For the benefit of those who know little or nothing of the game, and what is required of the pitcher, it would be well to make a few explanations. The average time occupied in a single good game of ball is from one and a half to two hours. During this time the pitcher takes his stand nine times in what is technically known as "the box," to "pitch" the ball toward the batsman. It is fair to say that he averages about twenty "pitches" each time he is in the box. This would make about one hundred and eighty pitches in each game. Sometimes the number is much greater and sometimes much less. The ball is delivered with all possible speed, so that the batsman has as little time to deliberate and gauge the ball as possible; the ball has been pitched from the box to the plate, a distance of fifty feet, in seven-eighths of a second. This work alone would be very trying, as it is extremely violent, the ball being thrown with all the strength of the player's whole body. Moreover, the ball is deflected from the usually vertical curve in any direction before it reaches the batsman.

It is the business of the pitcher to deliver the ball with the greatest possible, or a modified, speed, as his judgment directs, and coupled with this he so handles the ball before allowing it to leave him, that it is caused to deviate to the right ("in-curve") or left ("out-curve"), as the case may be, after it has taken its course in a certain direction. Not only does he do this, but he may also cause the sphere to make a sudden and unexpected ascent ("up-curve") or descent ("down-curve"). Any combination of these curves is possible, as up and out, down and out, up and in, and down and in.

I shall now attempt to explain more in detail the method of producing these curves, so that the etiology of "pitcher's arm" may be understood.

In the act of delivering the "in-curve" or "in-shoot"—so called because it turns suddenly toward the pitcher's right, in toward the batsman—the arm is swung forward at full length, the body also taking part thoroughly in the effort; every muscle is strained to give the ball speed. Just before it leaves the hand, the forearm and hand are sharply drawn across the chest, and the hand flexed quickly on the wrist with a sudden jerk or snap, and the ball allowed to roll off the tips of the index and median fingers. This imparts to the ball a rotary motion forward and from left to right.

In the position for pitching the "out-curve" the arm is also swung at full length, either above or below the shoulder. Then, with a short, quick motion, the hand is quickly flexed and adducted, and the elbow drawn backward and outward, while the ball is allowed to roll off the radial side of the index finger. This imparts to it a rotary motion forward, and from right to left.

In the delivery of the down curve, or drop ball, so known because while in the act of yielding to gravitation in the ordinary manner, it suddenly takes a sharp turn down, and falls to the ground several feet shorter than it would have done without the special twist imparted to it for this purpose. The arm is swung back with full force, and brought up over the head, or on a level with the ear, with the forearm a little flexed. The greatest force is now exerted in bringing the hand and arm quickly downward and forward, when, just before the ball leaves the pitcher, the wrist is snapped into semi-adduction and extension—*i. e.*, directly downward. The ball rolls off the upper or radial side of the index finger, and has imparted to it a rotation forward and downward.

In the production of the up-curve, or rising ball, so designated because it turns upward with the convexity of the curve downward, the arm is drawn

far back, the body is bent, and the arm then forcibly and quickly brought forward, with the hand near the knee. At this time the forearm is suddenly and forcibly supinated, and the wrist semi-adducted and extended, and the ball permitted to roll off the lowermost edge of the hand—*i. e.*, from the radial side of the index finger. This imparts to the ball a forward and upward rotation.

As has already been said, a combination of any of these curves is possible. For example, a ball delivered from the tips of the upturned fingers, with the rising-ball delivery, sends the ball upward, and causes it to descend before it reaches the batsman, and is known as the "snake ball," or rising drop.

The curving of the ball, or its lateral deviation from the proper line, is all due to the rotary motion imparted to it by the sudden, jerky, snapping motions of the forearm and hand, and pressure of the fingers. The curving is explained on the principle of the gyroscope. The peculiar and apparently awkward motion in pitching, is necessary to impart to the ball the proper gyration or twist, while the body movements are added to increase the speed of the ball in its passage from the pitcher to the batsman. Every pitcher has a somewhat different mode of delivery, and upon this depends the exact location of the disabling trouble under which he may be laboring.

PHYSIOLOGY.—The *in-curve* calls into action most particularly the pectoralis major, the biceps, brachialis anticus, and flexors of the forearm. The *out-curve* affects the pectoralis major, coraco-brachialis, infraspinatus, teres minor, and ulnar muscles. The *down-curve* strains most especially the pectoralis major, trapezuis, deltoid, and serratus magnus. The *up-curve* is mostly caused by the pectoralis major, biceps, and supinator brevis.

All kinds of pitching strain the elbow-joint. There is a tendency each time to a separation of the bones at the outer side of the joint—*i.e.*, radius and capitellum of the humerus. This is prevented, however, by the biceps, supinator longus, and extensor carpi radialis longior. The constant necessity for quick and forcible flexion of the elbow greatly strains the brachialis anticus; this is, therefore, one of the first among the muscles to feel the strain.

PATHOLOGY.—The changes induced by the exercise of pitching may affect muscles, ligaments, or bones. Secondarily, other structures may be involved, either by direct extension or by reflex action. Muscular changes manifest themselves in the usual stiffness or soreness the day after the exercise has been taken, or as much as two days later, without any special discomfort at the time of play or the day following. This muscular tenderness is due to hypernutrition caused by the excessive exercise. Adjustment follows in a few days, and everything assumes its normal course, for the circulation through the muscular tissue is then reduced to its usual requirement. On the other hand, daily exercise of the same character soon brings the muscle up to the requirement suggested by the increased supply of blood, and soreness soon disappears. What is true of muscles in this regard is also true of ligaments and bones. I feel quite certain that much of the soreness in either of these structures is due to accumulated excrementitious products, the result of sudden, transient, and excessive functional activity.

Muscles.—The brachialis anticus is probably most often the first to become painful and tender. The tenderness extends along the front and inner side of the lower third of the arm. The biceps participates in the tenderness soon after the preceding muscle, but it is usually only the lower half that is subject to pain. Examination of the arms of those in exercise or training will show that the lower end of the biceps belly becomes hard before the upper portion, and may be as firm almost as a piece of wood or bone, while the upper half is still capable of digital impression. The deltoid is also very commonly affected, and especially its posterior half, and more particularly in its upper portion. The pain may become so great that it is impossible to raise the elbow to the height of the shoulder, and the tenderness so marked that it is a decided relief to be divested of a coat, and a suspender is a positive load. The trapezius is often the seat of pain, but only, as a rule, along its upper or cervical border and a little below, just above those fibres which are attached to the scapular spine. The rhomboids and serratus magnus frequently become painful, the latter being strained in the delivery both of the out-curve and rising ball. The up-curve also greatly strains the latissimus dorsi; so, likewise, the drop-ball, for in both these deliveries the humerus is forcibly brought down toward the chest from an extended position. General soreness of the forearm muscles, both extensors and flexors, may be noticed, but this is mostly seen at the commencement of a season's work or in beginners. Sometimes there is moderate soreness of the triceps.

Ligaments.—The coraco-humeral is the one most affected in the shoulder-joint. Sometimes there is considerable pain in what has seemed to me, after careful study, to be the coraco-clavicular ligaments. Of all the shoulder ligaments, the acromio-clavicular are decidedly the most troublesome. This is readily understood when we take into consideration that in all the sudden and forcible movements incident to pitching, the acromio-clavicular joint is under an enormous and constantly recurring strain. The bones to which the ligaments of this articulation are attached are very porous, and thus apt to undergo changes from this strain. The external and internal lateral ligaments of the elbow are frequently the cause of lameness. They are subject to a great direct strain in all kinds of curve pitching. When congested or inflamed, they occasion the most excruciating pain, either at rest or during exercise. The wrist ligaments also become somewhat affected at times, but not to any very great extent. Occasionally much deep-seated pain is caused by a strained or congested condition of the radio-ulnar ligament

Bones.—That the bones are affected in the arms of pitchers, especially if the disability is of long standing, no longer admits of any doubt in my mind. The trouble is usually local and limited to the tendinous attachments of particular muscles and of ligaments and their immediate vicinity. Among these I would mention as most prominent the acro-

mio-clavicular joint, the outer border of the acromion process and outer end of the scapular spine, the tuberosities of the humerus, the middle of the outer side of the humerus, the two condyles, the bicipital tuberosity of the radius and the coronoid process of the ulna.

Symptoms.—Myalgia, ranging in degree from a simple soreness accompanied by stiffness to a high grade of tenderness, may be present along the anterior and inner aspects of the arm; it may exist in the fleshy cap of the shoulder; it is often found along the cervico-acromial arch, especially in its centre, and thence extends a few inches backward and downward across the fibres of the trapezius. Scapular and peri-scapular myalgia is frequent, especially in the rhomboid region.

Severer pain is felt in the involvement of the ligaments and tendons. These are readily discovered as thickened and tender by comparison with their fellows of the opposite arm. Pressure, even when light, causes marked pain, and tension causes intense suffering. This is readily produced, for instance in the elbow, by efforts at lateral motion at the joint, by which means the lateral ligaments are alternately put upon the stretch and relaxed. Fixation of the clavicle, while up and down, or to and fro motion is being made at the acromion, readily determines whether or not there is any affection of the acromio-clavicular ligaments. Passive motion of any of the joints having congested or inflamed ligaments or cartilage causes deep-seated and racking pain. The attempt to pitch with certain deliveries, for instance, as that which I have described for the rising ball, occasion a sudden, sharp, shooting, and intense pain to dart directly across and through the elbow-joint as would an electric shock. It passes from the inner to the outer side as a rule, though sometimes it is so rapid, practically instantaneous, that its direction cannot be determined. The pain, I believe, to be due to compression of tender structures, either ligamentous, cartilaginous, or osseous, or all, at the inner side of the joint, and tension of similar and surrounding parts upon the outer side.

The most severe, continuous, as well as sickening pains are due to the involvement of portions of the bones. I am well aware that I am treading upon new ground and subjecting the results of my investigation to sceptical criticism by the assertion that the bones are frequently involved in the affections of pitchers' arms. Nevertheless, I do say so most positively. The observation of a single case of long-enough standing and of sufficient severity will convince anyone that the trouble is largely osseous. It can be determined by comparison with the opposite limb, by the characteristic symptoms of osteitis and osseous congestions, and by the complete hardness of the bony enlargement.

These osteitic affections take place wherever the muscles that are most used have their attachments, and especially when the bone at the point of attachment is soft and porous. For this reason most trouble is encountered at the extremities of the bones. The rationale of bony involvement is simple when we consider the mode of insertion of muscles by their tendons to bone and also the attachment of the ligaments. The constant excessive pulling of the tendinous expansion upon the connective tissue framework of the bone calls for more work, more nutriment, more blood, and the result is hyperæmia, congestion, inflammation, proliferation, calcareous deposits—in short, a true osteitis resulting in a local hypertrophy of bone. Again, the periosteum is pulled upon and strained; its vessels, for a like reason as those of the bones, become gorged with more blood; periostitis eventually ensues, and with it more or less hypertrophy of the subjacent bone.

Treatment.—This may be prophylactic or curative.

Prophylaxis should consist in regular exercise or practice, regardless of the work done in a game. The practice should be of a remitting character. By this I mean that a pitcher, during practice, should work at his ease, and occasionally put on a spurt in speed and make an effort to do his best. Then he should lapse back again into easy work. These changes could be made a number of times during a single continuous practice of about one hour. Their frequency and duration must depend upon the condition of the pitcher at the time. When he has what is called an "off day," a day when he lacks natural interest in his work, it is well to do nothing but easy pitching. At no time should the exercise be violent, that is, straining, at the beginning. The reason for this is that in the complex and rapid movements of this exercise, together with the shallowness of the glenoid cavity, and the comparatively large size of the head of the humerus, it is easy either to dislocate the shoulder-joint or give it a bad wrench. Such an accident may disable one for a whole season if it does not do so permanently. Beginning the exercise with ease, and gradually increasing it, enables the muscles to accustom themselves to associate or coördinate work. The truth of this is borne out by the fact that most of the wrenches and dislocations that happen to ball players, occur in the early part of the season and in the early part of the game.

Pitchers, to be in "good form," should practise for about one hour every morning and afternoon, Sundays included. The exercise should be restricted to fifteen or twenty minutes for that half of any day in which regular work is to be done in a game.

All exercise should invariably take place in the sun, unless this is impossible because of cloudiness, or when work has to be done in-doors on account of rain. When the temperature in the shade falls below 60° F., it becomes risky to pitch with vigor. The risk increases in proportion as the temperature falls below this point. It is necessary, after severe out-door practice at a lower temperature than 60° F., to keep the body very warm, either by vigorous general exercise, such as walking; or, better still, by keeping in a warm room for one or two hours. This is all important at the beginning of the season with one who has been out of practice during the winter. An important fact to bear in mind, though seldom, if ever appreciated, is, that it is of vastly more importance to maintain a high temperature equably about the whole body, than taking good(?) care of the pitching arm and letting the rest of the

body take care of itself. This latter plan is the one usually followed, but is radically wrong.

Liniments should never be used on a pitcher's arm; or, in fact, on any part of the body of an athlete in case of pain from over-exertion. In the first place, they are utterly useless, as any number of impartial and disgusted sufferers can testify. Instead of mitigating the deep-seated pains, they add to them that of an irritant, especially if the liniment is "strong," and the result is a combination of superficial and deep pains. In the second place, if they contain aconite and if this constituent is absorbed, it benumbs the terminal nerve filaments and so lowers the maximum of muscular contractility as well as the rapidity of its responsiveness to the will and coördination reflexes. Morphia or opium and other anodynes are not unlikely to produce exactly similar results. That liniments sometimes have a good effect in these cases I do not deny, but the effect is mainly that of a much required placebo, and in such instances it is best to use a very mild, non-anodyne liniment, with plenty of hot flannel.

Rubbing, massage, and passive motion should invariably be discouraged. These manipulations are excellent substitutes for voluntary exercise in patients who are helpless or comparatively so, but they serve no beneficial purpose to a limb that has just ceased undergoing the severest kind of physical strain for one or two hours. Such a part requires temporary rest, and will do best without systematic exercise, though passive, till the next regular period for practice.

Regular exercise twice daily in the manner already indicated, should form the main treatment of a diseased pitching arm. Every other plan of treatment, to be permanently beneficial, must be subservient to this one idea. The object of continuous exercise is to encourage and bring to a climax and final completion those congestive and inflammatory processes in the muscles, ligaments, cartilage, and bones that lead to hypertrophy and necessary increase in strength. Some individuals are already so well endowed with these structures that additional growth is not required; others have small bones and weak muscles and ligaments with tender, or at least soft, articular cartilages. All such must be encouraged and nursed in their growth till it is completed. If this is intelligently managed, I predict that the owner of such an arm will never suffer damage in his arm from overwork, but may through accident or gross carelessness.

It is important to keep these nutritive or inflammatory changes within safe limits. When pain, tenderness, or swelling becomes excessive, it is well to make the exercise less violent and of shorter duration. Much of the pain experienced immediately after a game or practice may be abolished by position. As a rule, if the arm is held directly upward, preferably by another person without any effort on the part of the patient, there will speedily ensue a sense of comparative comfort. This I suppose to be due to the gravitation of some of the excess of blood contained in the arm back to the trunk, in this way relieving tension and pressure. A few gentle strokes from the hand along the arm down to the base of the shoulder facilitate the return of blood and hasten relief. Immersion of the whole upper extremity and shoulder into water at as high a temperature as can be tolerated, produces a most gratifying sensation of relief. This I suppose to be due to 1st, a general sedative effect and relaxation of the tissues; 2d, a dilatation of the superficial vessels causing an appreciable and beneficial depletion of those in the deeper and congested or inflamed structures; 3d, a quickening of the circulation, and consequently more rapid elimination of morbific material accumulated in the tissues during the excessive labor. If a rubber sleeve including the whole limb and fitting tightly about the base of the shoulder is applied with the arm held up over the head by an assistant, and the water turned into the sleeve, the result will be the combined effects of hot water and gravitation. This may be kept up for from five to thirty minutes, depending upon the severity of the pain, and upon the effects trials have shown it to have on that particular patient. The drying of the patient's arm must be done gently. There must be no vigorous rubbing or squeezing. He should not at all refrain from using it for ordinary purposes even if it be somewhat painful.

In severer cases, where there is an excess of inflammatory products, the best remedy is mild galvanism. The strength of current and length of time it is employed are determined by experience with the patient under treatment, and his own sensations. This seems to be the best rule. I have employed large flat electrodes, one in front and the other behind the elbow-joint. At the shoulder I would put one on top and the other at various painful points. As a rule, I apply both poles to sensitive parts. Occasionally it is well to break the current, though not often, and sometimes I reverse it. Mild galvanism is very gratifying and should be done in the evening, so that the nutritive changes induced by the passage of the current shall act undisturbed till the next morning.

It is of great importance that the kidneys, bowels, and skin should act very freely. It has been my experience that it makes little difference as to what or how much a pitcher eats so long as he follows a normal appetite, is without idiosyncrasies as regards diet, and leads a regular life free from excesses, provided the skin, kidneys and bowels act freely.

A languor often experienced after a game, and which prevents an appetite and interferes with digestion, is very often counteracted by a glass of cold milk. Beer has the same effect, but it is best never to order it, because it is often soon abused and the physician, as well as the patient, receives, and too often merits, blame.

In those cases where the pain is so severe that it becomes agonizing, and not only prevents sleep but elicits groans from the sufferer, it is necessary and beneficial to give a hypodermatic of morphia. It should be large enough to induce freedom from pain and permit sleep. The pain must have sunk to a minimum without the aid of an anodyne before pitching practice is resumed, and then it must be easy and very gradually increased. Sharp pains are always warnings that it is well to heed. Any kind of exertion

that will often cause a sharp pain has to be carefully studied; and a remedy will suggest itself that will result nine times out of ten in permitting the patient to pitch the same ball with either persevering and gradually increasing exercise of the same delivery, or some modification of it that experiment will show to be possible without pain.

My practical experience as an amateur ball player may help to convince that the points I have made are well founded. I developed a most excruciatingly painful right upper extremity from pitching. Every muscle, bone, and ligament, from the vertebral spines behind and the sternum and linea alba in front, to the right wrist, were in turn affected either singly or in groups. The pain and stiffness extended on the trunk between the right superior curved line of the occipital bone to the right iliac crest. Muscular soreness, fatigue, anorexia, fever, stiffness, and a loss of sleep from pain were for many weeks the rule. One night, after a hardly contested game, I was compelled to call up a friend from an adjoining room and have him administer mxv of Magendie's solution hypodermatically. The strongest liniments, both as regards counter-irritant and anodyne properties, were hopelessly ineffectual in making even the slightest beneficial impression.

My connection with a well-known athletic club and acquaintance with intelligent and college bred professional ball-players enabled me to see what could be done in the way I have already suggested for either prevention or cure. By adhering to my own plan of treatment, less the regular use of electricity, I was enabled to get entirely well and develop "staying qualities" at play that professional players have declared exceptional. This is mentioned simply to show what can be done by judicious management.

240 South Eighth Street.

PISTOL-SHOT WOUND OF ABDOMEN TREATED BY LAPAROTOMY AND SUTURING THE INTESTINES.[1]

BY R. A. KINLOCH, M.D.,
OF CHARLESTON, S. C.

JOSEPH B., colored, aged twenty-seven, was admitted into the City Hospital, January 21st, at 7.30 P.M. He had, two hours before, been shot in the abdomen with a pistol-ball (38-calibre), by a policeman, with whom he was struggling at the time. The ball had entered an inch and a half to the left of the umbilicus. There was also a slight wound of the scalp, supposed to have been received by falling after being shot. There was but little shock; patient seemed comfortable, with the exception of pain on the inside of the left thigh, which was intensified by movement of the limb. Pulse was 88, respiration 24, temperature 99°. He was given by the house-surgeon forty drops of tincture of opium, put to bed, abdomen carefully washed with a solution of bichloride of mercury (1 : 2000), iodoform sprinkled upon the wound, a compress of cotton placed over this, and retained by an abdominal bandage.

I visited the patient an hour after his admission into the hospital, and immediately directed the preparations for laparotomy. At 10 P.M., the preparations being complete, half a grain of morphia was given hypodermatically, and soon after anæsthesia was induced by the A.-C.-E. mixture. The little finger was first passed into the wound, and subsequently a Nélaton porcelain-ball probe, to verify the fact of the entrance of the projectile into the peritoneal cavity. The cavity was then opened into by an incision eight inches in length, upon the median line, extending from the umbilicus to just above the pubes. The incision was made under a weak carbolic spray. The intestines were carefully drawn out and examined piece by piece. Soft, clean towels, wrung out of a warm solution of bichloride of mercury (1 : 10,000), were used for covering the intestines as the examination proceeded. The jejunum was found to have four perforations—two were orifices of entrance and two of exit. The ileum had two perforations—one of entrance and one of exit. The mesentery was perforated in two places, and was besides badly torn. One of the vessels of the mesentery was bleeding freely. The hemorrhage was at once controlled by pressure-forceps, and subsequently by a fine silk antiseptic ligature. There was a considerable amount of blood, fluid and clotted, in the cavity. All the wounds were closed, without paring, by means of a delicate, round, smooth, straight needle carrying fine antiseptic silk, forming the Lembert suture. The large wound in the mesentery was as carefully brought together as possible, but it was noticed that at this point there was an extensive infiltration of blood which could not be removed. The cavity was carefully cleansed, and washed out with the weak solution of bichloride of mercury.

Much difficulty was experienced in returning the intestines into the cavity, because of the rigidity of the abdominal parietes. The abdominal wound was closed by deep silver wire sutures, and superficial sutures of fine antiseptic silk. A large rubber drainage tube was inserted, and the wound dressed with iodoform, cotton, and a sublimate bandage. During the operation, which was necessarily protracted, three hypodermatic injections of sulphuric ether and tincture of digitalis were administered. The patient was in very good condition when removed from the operating-table to his bed. Now another hypodermatic of half a grain of morphia was given. Cracked ice in small quantities was allowed.

January 22, 6.30 A.M. Pulse 108, respiration 36, temperature 101°. Allowed a spoonful of milk and lime water occasionally, if not nauseated. Morphia, if required to relieve pain and insure quiet. Incontinence of urine was noticed. At 5 P.M., pulse 118, respiration 25, temperature 100°.

23d. At 12 midnight, pulse 108, respiration 32, temperature 100°. 3 A.M., pulse 118, respiration 32, temperature 102.9°. 6 A.M., pulse 104, respiration 28, temperature 101.4°. At 8.30 A.M. vomiting occurred. I visited the patient soon after this,

[1] Read before the American Surgical Association, May 12 1887.

and upon examining the drainage tube and wound, found that one of the wire sutures had broken, and a small knuckle of intestine was protruding through the middle of the wound. There had been some bloody serum discharged through the tube. I disinfected the wound, carefully returned the intestine, and closed the gap in the wound by a stout antiseptic silk suture. The patient made no special complaint of pain. Drainage tube was removed. Small quantities of peptonized milk allowed, if the stomach should be quiet. Morphia, if necessary.

At 2.30 P.M. Pulse 120, resp. 20, temp. 102°.

At 5 P.M. Pulse 108, resp. 25, temp. 102°.

At 9 P.M. slight vomiting again occurred. Nothing but ice had been taken. Vomiting occurred at intervals during the next two hours, then ceased for one hour, and again recurred. At 12.15 A.M. the patient suddenly died.

Post mortem (sixteen hours after death). Abdomen alone examined. This was greatly distended. Two more of the wire sutures had parted, as the consequence of the post-mortem gaseous distention of abdomen. No adhesion of the parietal peritoneum at wound; about half a pint of dark serosanguinolent fluid in cavity; patches of lymphy exudation upon serous surface of intestines and parietal peritoneum; intestines generally hyperæmic; all of the intestinal wounds that had been sutured were closed, and at some points the convolutions of the gut were slightly adherent to the parietal peritoneum; all of the sutures were buried by the exudation, showing that good repair had begun; no fecal extravasation; a portion of the rent in the mesentery was gaping; a circumscribed abscess was discovered in the meso-colon, to the right of the vertebral column, and out of the line of direction of the bullet—this, said my medical friend who conducted the autopsy, "looked like the breaking down of a caseous lymphatic gland." The bullet was found in the soft parts behind the body of the fourth lumbar vertebra, on the left side, it having in its passage cut away a portion of the body of the vertebra; kidneys congested and ecchymotic.

Remarks.—The present attitude of laparotomy for traumatism is such that it should be regarded as imperative with the profession to report every case occurring in practice. The very limited number of cases of operation for bullet wounds of the abdomen, without protrusion of the viscera, that have been reported, are not sufficient to furnish valuable statistical evidence. Nor is the contrast between the results obtained by the active and the passive treatment in such cases yet sufficient to elicit a unanimous verdict from experienced clinicians.

The case whose clinical history I have just read, is the third in which I have practised free abdominal section for bullet wounds of the abdomen without visceral protrusion. The time between my first and third operation is about twenty-three years. This long interval between these operations is explicable simply from the fact that cases where such practice could be instituted have rarely occurred to me. Upon two occasions, since my first operation, I have seen patients recover without interference. In one of these, the lapse of time before the case was seen rendered interference unadvisable; in the other, operation was rejected by the sufferer and his friends.

The limited number of laparotomies for wounds of this kind, done in the civilized world during the past twenty-three years, my operation of 1863 being regarded as the first, would lead to the inference that the procedure has not during this time been accepted by a large number of the surgeons of the world. This may be regarded either as an evidence of conservatism, or as a rejection of bold and venturesome effort because of its apparent inhumanity.

Upon the publication, in 1882, of my second case, a fatal one, I used these words: "While this adds another fatal case to the short list of those in which similar treatment has been instituted, it does not alter my belief in the correctness of the practice in the class of injuries presenting so gloomy a prognosis."

Again, I said: "While not as hopeful as my distinguished friend Dr. Sims, because of the success of ovariotomy, I do look forward to better results than have been so far obtained." "Listerism, and much of the knowledge acquired by the ovariotomists," I suggested, "would soon embolden surgeons, who had heretofore favored the passive policy, and give us fuller statistics upon which to reach conclusions." This opinion has begun to be verified, but the progress, if I can call it such, has been slower than a sanguine surgeon could have expected. Dr. Thomas S. K. Morton, in a valuable paper (The Medical News, Feb. 19, 1887) entitled "Abdominal Section for Traumatism," read before the Philadelphia County Medical Society, on January 26, 1887 (and which paper anticipated much that I had purposed saying upon this occasion), gives, as he says, the result afforded by canvassing the literature of the world, and furnishing an abstract of every case which he had been able to find. The total number of cases of abdominal section for traumatism, as given, is only 57. But 22 of these were cases of gunshot wounds. Of the 57 cases, 36 died, and 21 recovered, a mortality of 63 per cent. Of the 22 gunshot cases, 5 recovered and 17 died, a mortality of 77 per cent.

The gunshot cases alone concern us at present, but I trust I may be excused for alluding to one matter which personally interests me.

"The first case of abdominal section for traumatism," says Dr. Morton, "was that of Dr. Walters, of Pittsburg, for ruptured bladder, in 1862. The first successful case was the same. The first after Walters was that of Heath, in 1876. The first recovery after Walters case was that of Dr. W. O. Roberts, done for stab-wound, August 28, 1882.

"By the term abdominal section for traumatism, is meant to include those cases where the operator deliberately opens the belly or greatly enlarges an existant wound for the purpose of discovering intraperitoneal wounds, and, if they are present, repairing them as far as possible, together with more or less final cleansing of the peritoneal cavity."

My first operation was performed May 27, 1863. This was for traumatism most certainly; and, to say nothing of its being for gunshot injury, it should stand next to Walters's case, and before Heath's of

1876. My case recovered; so, in this regard too, the case precedes Roberts's of 1882. It most assuredly comes within Dr. Morton's definition of traumatism.

In this operation for gunshot wound, I deliberately opened the belly, repaired intraperitoneal wounds, and cleansed the peritoneal cavity. Again, Dr. Morton alludes to my case of 1881 as "the first recorded case of gunshot wound treated by abdominal section." "The first recovery of gunshot case," he says, "was the case of Kocher, of Switzerland, in 1883." And afterward he says: "The first recovery was a case operated on by Dr. William T. Bull, of New York, in 1884." Dr. Morton intended, no doubt, to say that Dr. Bull's case was the first recovery in this country. In this he is correct. If my first operation of 1863 is to be excluded from the category of laparotomies for gunshot wound of the abdomen, and my case of 1881 recognized as the first case on record. This question I will leave for others to decide, it concerns me only so far as it pertains to the history of the operation. It is true that the operation of 1863 was practised seven months after reception of the wound. Nutrition of my patient was failing rapidly; there had been but one discharge per rectum, and that only the contents of the lower bowel, since the reception of the wound, and inevitable death was in the near future. Now it was that *laparotomy for gunshot wound, without protrusion of viscera, was done for the first time.*

In my publication of the case I urged this practice as applicable to recent gunshot wounds of the abdomen without protrusion. I put forward the success obtained as an argument against the almost universal practice of abandoning intestinal lesions of this kind to nature, rather than to risk opening boldly the peritoneal cavity. I expressed the opinion that the result of the operation should serve to encourage that hopefulness and boldness so essential to progressive surgery, and at all times preferable to despair.

Since the publication of Dr. Morton's statistics there have been several additional reports of operations to be added to the list. The cases of Dr. Packard, of Philadelphia, and Dr. C. Kollock, of Cheraw, S. C., now occur to me. The latter was a successful operation, and one worthy of notice, because of the confidence exhibited by the surgeon in his art, and the recovery of the patient under most adverse surroundings. The operation was done in a negro cabin, without professional assistance, and without the opportunity of carrying out antiseptic precautions.

The signs of our times, I now may be permitted to say, are most hopeful. Surgeons are beginning to accept the argument of Baudens, long ago so boldly and happily expressed. No longer, I trust, will the fear of being regarded inhuman, or too bold, "stay the hand that alone can preserve the days of a dying man." Humanity is not to be illustrated by inactivity or stoical indifference. The rule of conduct, as said Baudens, should rather be the well-known aphorism, "*nullus anceps medium aquam nullam.*"

There are several points of special interest connected with the clinical history of this case, to which I will briefly advert. First. The absence of symptoms thought to be of diagnostic value in intestinal lesions from bullet wounds. There was no marked shock, no escape of fecal matter from the abdominal wound, no sudden meteorism. To have relied upon this negative evidence, and to have resorted to a passive treatment under the assumption that there was no intestinal lesion, would, it is true, have been of no detriment to this patient, as the result proved, yet I would have been led far away from a correct diagnosis.

Second. From the numerous intestinal perforations there was no escape of fecal matter into the peritoneal cavity. I have upon another occasion called attention to this fact as one not to be passed over in connection with our reasoning as to the propriety of an active or a passive treatment in gunshot wounds of the abdomen. (*Journal of Amer. Med. Association*, Dec. 18, 1886.) It is certainly an argument to be used against the active treatment. The prevailing idea is that general peritonitis arises from fecal extravasations, and that the indication for laparotomy is mainly founded upon the necessity of obviating or removing this supposed cause. To quote merely from two high American authorities: says Gross, in his *System of Surgery*, "the great danger is from fecal effusion, and such effusion is almost inevitable, even when the opening of the intestine is of a very small extent." Says Hamilton, in his *Treatise on Military Surgery and Hygiene*, "It is equally true that death, in a great majority of cases, is caused by extravasation of the contents of the bowels into the peritoneal cavity, and the consequent inflammation."

It is, indeed, difficult to explain the absence of fecal extravasation in the more fearful intestinal lesions, however easy it may be to understand this in cases of very slight wounds. I desire only to offer my clinical experience in corroboration of what has been observed by others. The spasmodic rigidity and hardness of portions of intestines injured have been noted by Baudens, and suggested as a diagnostic sign to be recollected when the finger is to be passed through the parietal wound into the peritoneal cavity. I particularly observed, in my investigation, that the intestinal perforations were measurably closed by the crowding of the mucous and muscular coats of the bowel into the wounds of the peritoneal layer, these tissues seeming to act like a cork in preventing the escape of the fluid contents. Paralysis of the tube, the result of the severe shock and injury, may, by preventing peri-taltic action, explain to some extent the absence of fecal exudation. Gross, in his *Experimental and Critical Inquiry into the Nature and Treatment of the Wounds of the Intestines*, tells us of the marked contraction and eversion of incised wounds of the intestines, by which the extent of the wound becomes much reduced. The experiments of Mr. Travers to prove that fecal extravasation was not a necessary consequence of punctured and incised wounds of the intestines are familiar to all. Mr. Erichsen, among the most prominent of modern surgeons, has affirmed that "it is seldom that feces are extravasated from a gut that is not protruding, unless it be very full at the time of injury, or the wound in it be very large."

He cites two cases of shot wounds of the intestine, coming within his own observation, to bear him out in this assertion. There are also others who have entertained similar views. In the *Surgical History of the War of the Rebellion*, Dr. Otis notices these recorded observations, and, in his enthusiasm for *his* side of the argument, pronounces them "dangerous fallacies." The truth most probably is, that the cases in which there is no fecal extravasation constitute exceptions to the general rule. In any investigations of scientific truth it is well for one to present fairly the arguments which seem to militate against his own view of the case, and it is with this idea that I have called attention to the above facts.

Third. I have in both of my fatal cases, been impressed with the little suffering experienced by the wounded, and their almost painless death. This is contrary to general observation and belief in cases of acute general peritonitis. As a rule, death comes quickly. With "hyper acute peritonitis," says Baudens, "life is prolonged scarcely more than twenty-four hours." But, in the language of John Bell, death is not easy: "there soon come on dreadful pain and vomiting, costiveness, hiccough, the torments of the *miserere mei*, and the patient in great anguish expires." Where gangrene results there may be a "deceitful ease," a slower and less painful death. How is this absence of suffering to be explained? It is probable that the use of the drainage tube, admitting of the escape of the inflammatory effusion, and thus relieving belly tension, may have something to do with it.

The treatment of acute peritonitis by abdominal section has been proposed and practised. Should relief from pain follow upon such practice, it may be explicable upon the same principle. This may be advanced as another argument for laparotomy in intestinal wounds, for next to the cure of disease we look to the satisfaction coming of a painless death—the humanity of a bold practice.

Fourth. The fatal termination of a case like the one I have reported should not be used as an argument against the treatment by laparotomy. Abdominal wounds, the precise nature and extent of which can scarcely be revealed before operation, must often prove as fatal as are cases of brain and heart injuries which are at once fully recognized. Prognosis must at times not be announced until suggested by diagnosis. This case is one in point. The injury to the mesentery, apart from the numerous intestinal perforations, was, perhaps, sufficient to insure a fatal result, by its consequent peritonitis and sepsis. The surroundings of the case were unfavorable to operation, as all will admit who know anything of a negro hospital in a southern latitude. The rupture of one of the wire sutures, and the consequent hernial protrusion, was most unfortunate. I cannot pretend to say how far this may have influenced the destructive processes which eventuated in death. At the time of operation I objected to the character of the wire handed me for use, fearing that it had not the necessary strength. It happened to be all that was in the hospital at the time, and had to be accepted. The tension of the abdominal walls in the powerfully muscular subject delayed the operative procedure, and was a formidable obstacle to the return of the intestines into the cavity, and the keeping of them there. To some extent this tension was increased, as inflammatory results appeared, and thus the strain upon the sutures was more than they could bear.

The formation of a circumscribed abscess in the meso-colon in so short a period of time, I allude to, in conclusion, as a striking feature in the pathology of the case.

CASES OF CHEESE POISONING.

BY SHIPPEN WALLACE,
CHEMIST TO THE NEW JERSEY STATE BOARD OF HEALTH AND TO THE STATE DAIRY COMMISSIONER.

On January 20th last, over fifty persons were suddenly taken ill at Jeanesville, Pa. The symptoms were the same in all the cases, and on investigation by the physician, he was led to the belief that the cause arose from cheese which had been purchased at the village store.

Portions of the suspected cheese, obtained from the families of those who were ill, were sent to me for analysis. I was, from the symptoms, led to suspect tyrotoxicon as the cause, which proved to be correct on analysis, the chemical reactions not only being obtained, but also the physiological test: a cat having been made quite sick after partaking of milk to which a small quantity of the isolated tyrotoxicon had been added.

During the past month a similar outbreak of sickness, but not affecting so many persons, took place at Riverton, N. J., and on the analysis of the cheese which the attending physician suspected to be the cause, I also found tyrotoxicon to be present. In both instances no deaths occurred, the patients recovering with proper treatment.

There can be no doubt that the cheese was the cause in both instances. In the Riverton case, in one family of seven, all partook of the same food with the exception of one, who ate the same that the others did, but did not partake of the cheese. All but this one were taken sick within a few hours; and while in the Jeanesville case there were a few who were not made ill, yet all who were had eaten of the cheese to a greater or less extent. Dr. E. B. Doolittle, of Jeanesville, had charge of the cases there, and gives the following account of the symptoms: "There were at least fifty persons poisoned by this cheese. There were also eight others who ate of the cheese, but felt no unpleasant effects; whether this was due to personal idiosyncrasy or to an uneven distribution of the poison throughout the cheese, I am unable to say.

"The majority, however, comprising fifty or sixty persons, were seized in from two to four hours after eating the cheese with vertigo, nausea, vomiting, and severe rigors, though varying in their order of appearance and in severity in different cases. The vomiting and chills were the most constant and severe symptoms in all the cases, and were soon followed by severe pain in the epigastric region, cramps in the feet and lower limbs, purging and griping pain in the bowels, a sensation of numbness or pins and needles, especially in the limbs, and, lastly, very

marked prostration, amounting almost to collapse, in a few cases.

"The vomit at first consisted of the contents of the stomach, and had a strong odor of cheese, afterward it consisted of mucus, bile, and in three or four of the severest cases blood was mixed with the mucus in small quantities. Microscopic examination of the same was not made, but to the eye it appeared as such. The vomiting and diarrhœa lasted from two to twelve hours. The rigors and muscular cramps, one to two hours. The diarrhœa, at first fecal, became later watery and light-colored. No deaths occurred, and for the most part the effects were transient, and all that remained on the following day were the prostration and numbness; the latter occurred in about one-half of the cases, and disappeared in from one to three days.

"Children, as a rule, seemed to suffer less than adults, and, of course, it was not possible to elicit as definite symptoms from them. The suddenness of the attack was remarked by all; some feeling perfectly well until the moment of attack. Nor did the symptoms seem to be in proportion to the amount of cheese taken. Some of the severest cases declared they had not eaten more than a cubic inch of it. One of the severest cases was about six and a half months pregnant, but no interference with pregnancy occurred. All the cheese which caused the sickness came from the same piece."

This outbreak is the largest of the kind of which we have a record since the one in Michigan a few years since, which resulted in Prof. Vaughan discovering the cause, and giving the toxic substance its name, tyrotoxicon—cheese poison.

Last summer, at Long Branch, forty-three persons were taken ill, caused by this same agent in milk (THE MEDICAL NEWS, September 25, 1886), and lately at Memphis there was a similar outbreak.

To Dr. Vaughan is due the credit of the discovery of tyrotoxicon, and while we find in the *Lancet* of January 29, 1887, an article on a poisonous ptomaine in milk, to which the writer proposes the name "lactotoxine," and expresses his ignorance of any literature bearing on the subject, yet on reading the article one is struck with the great similarity and arrangement of symptoms, and method of analysis there found, to the article written by Dr. Vaughan, and if the writer was as ignorant as he states, it certainly affords a very striking coincident.

Of what tyrotoxicon is, *chemically*, we are at present ignorant, but there can be little doubt that we shall soon know, as Dr. Vaughan is engaged in its study, and has already published an extremely interesting "preliminary note" (THE MEDICAL NEWS, April 2, 1887).

Its cause and origin are, undoubtedly, to be found in a fermentation of the milk, caused by improper treatment after milking (THE MEDICAL NEWS, September 25, 1885), and that it is already in the milk from which the cheese is made, and is not formed in the cheese, but only perhaps increased in quantity, is not only possible but probable. If such is the case, greater attention on the part of manufacturers to the care of the milk, would result in obviating its presence.

In opposition to the above theory, however, is the fact that all "cheeses of a batch" do not contain it, but unfortunately we cannot trace back the history of a cheese to the time when it was milk, with the certainty that we can and have traced milk which has caused illness. In the Jeanesville case the cheese causing the illness was one of a lot of thirty which were received at the same time from the factory; twenty-seven had been sold, and no illness resulted; but it was, of course, impossible to learn the history of the cheeses back to the time when the cows were milked.

HOSPITAL NOTES.

TREATMENT OF CHOLERA INFANTUM IN THE PHILADELPHIA HOSPITALS.

HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

DR. LOUIS STARR, in the treatment of entero-colitis in the clinic for children, gives great prominence to the hygienic management. The following points are insisted upon:

a. Fresh air must be secured by taking the child to a public square in the cool of the morning and evening, or, better still, by a morning or evening trip on one of the river steamboats. The heat of the day must be spent in as cool a room as can be had. Coddling is discouraged, as many a stout mother has hastened her infant's death by too fond and constant nursing in the arms.

b. The clothing must be as thin as possible, provided, always, that woollen be worn next the skin.

c. Twice, or three times a day in very hot weather, the whole surface of the body must be sponged with water at a temperature of 80° F., and dried with gentle rubbing. The addition of rock salt renders these baths more bracing. Full warm baths must supplant the cold spongings if there be much prostration.

d. Diet most carefully regulated as to quality, quantity, and intervals of administration. Sound cow's milk must form the basis of the food in bottle-fed babies. Fairchild's peptogenic powder is very useful in artificial feeding.

Medicinal treatment varies with the case. Should the patient be seen early in the attack, it is initiated by a laxative. A teaspoonful of castor oil with five drops of paregoric, or the same quantity of spiced syrup of rhubarb, is sufficient for an infant of one year. Afterward, while the stools are yellow, homogeneous, and not very frequent, alkalies and astringents are employed, as:

℞.—Sodii bicarb. . . . . gr. xxxvj.
Syrupi rhei aromat. . . . f℥ss.
Misturæ cretæ . q. s. ad f℥iij.—M.

S.—One teaspoonful every two hours, for a child of one year.[1]

When the stools are frequent, green, and acid in reaction, small doses of opium are added to the alkali; for example:

℞.—Tr. opii deod. . . . . ♏vj.
Bismuthi subcarb. . . . gr. lxxij.
Syrupi . . . . . f℥ss.
Misturæ cretæ . q. s. ad f℥iij.—M.

S.—One teaspoonful every two hours.

[1] All prescriptions given are calculated for this age.

At the same time, the skin of the whole abdomen is reddened, two or three times a day, with a weak mustard draught—one part of mustard to five of flour.

If the evacuations be liquid and contain whitish or greenish flakes, and the above treatment fail after a fair trial, good results often follow a short mercurial course; thus:

℞.—Pulv. ipecac. comp. . . gr. ij.
Hydrarg. chlorid. mit. . . gr. ½.
Cretæ præparat. . . . gr. xxxvj.
M. et ft. chart No. xij.

S.—One powder every two hours for twenty-four or forty-eight hours, or until the stools become yellow and homogeneous.

Should the stools be frequent and serous, more powerful astringents are used, as aromatic sulphuric acid, nitrate of silver, or oxide of zinc.

When the stomach is very irritable, rectal injections are resorted to, the drugs used being tincture of opium, nitrate of silver, and ipecacuanha. Ipecacuanha is chosen when there is much tenesmus with the discharge of blood and mucus. It may be administered as follows:

℞.—Ext. ipecac. fld. . . . ♏xij.
Tr. opii deod. . . . ♏viij.
Mucilag. acaciæ . q. s. ad f℥ij.—M.

S.—Inject one tablespoonful every four hours.

Stimulants—wine of pepsin, brandy, or whiskey—are given when there is prostration.

In cases of recovery, the diet and hygiene are carefully watched until all danger of a relapse has passed; the astringents, etc., are gradually dropped, and digestants and tonics ordered.

The antiseptic treatment recommended by L. Emmett Holt has lately been tried with good results. It embraces the careful attention to regimen already alluded to, preliminary evacuation of the bowels with castor oil, and the administration of naphthalin. The latter is usually ordered as follows:

℞.—Naphthalin,
Ground coffee . . . . ää gr. vj.
Sugar of milk . . . . gr. xxiv.

M. et ft. chart No. xij.

S.—One powder every two hours.

In the whole conduct of our cases, the greatest care is taken to avoid locking the bowels.

Philadelphia Hospital.

Dr. John M. Keating holds that the question of summer complaints may be considered under three heads, viz., simple indigestion, the inflammatory form, and the septic. These may be distinct, or they may be combined in the same case.

Too little stress has been laid upon the inherited feebleness of the digestive organs in many children. One is often surprised at the failure which meets the attempt to bring up a child on the bottle, notwithstanding every precaution be used. In these cases the digestive function is at fault—the infants are dyspeptic. Every child is a study in itself. Family idiosyncrasies have to be taken into consideration. "Bringing up by hand" is a science, and cannot be left to the nurse, however faithful and accomplished she may be.

At this time of the year, the simpler forms of diarrhœa are due to indigestion. The child is enfeebled by the intense heat, the teething process irritates its nervous system or affects its mucous membranes; the stools become frequent and watery, become greenish or at times are colorless, and then there are flatulence and pain. If the baby be in the city, these symptoms may come on suddenly and with great intensity; there may be, also, vomiting and fever, with evidence of cerebral excitation. The treatment of such a case should be as follows: Absolute rest; the child should be kept in as cool a place as possible. *Its bottle should be stopped at once*, and for a few hours its diet should be limited to cool gum-arabic water, with lime-water, wine whey, if there is much prostration, or a small amount at a time of Valentine's beef juice, with wine of pepsine. Toast water, or egg-albumen water, may be used to vary the diet if the attack persists for several days. Counter-irritation by hot foot-baths, flannels saturated with essence of ginger, or spice poultices to the abdomen, are very useful; and the gums should always be examined, and lanced if necessary, or the child should be given a soft handkerchief, soaked in ice-water, to suck or bite on. As for the medicinal treatment, we should use those preparations that allay gastric irritability.

℞.—Hydrarg. chl. mitis . . . gr. 1/12.
Ext. pancreatis (Fairchild) . gr. j.
Sodæ bicarb. . . . . gr. j.—M.

One every hour.

This Dr. Keating has found to be of great service; or,

℞.—Bismuthi subnit. . . . gr. j.
Pepsini sacch. . . . . gr. ij.
Pulv. aromat. . . . . gr. j.—M.

But, and this is very important, if there be vomiting, and the passages contain curds, he would prefer to give

℞.—Hydrarg. chl. mitis . . . gr. 1/12.
Pulv. ipecac. . . . . gr. 1/4.
Sodæ bicarb. . . . . gr. j.—M.

One every half hour till six are given, and then the following every hour until the stools are free from curds and normal in color:

℞.—Ol. ricini . . . . . gtt. x.
Pulv. acac. . . . . gr. ij.
Syr. rhei aromat. . . . gtt. v.
Spts. vini gal. . . . . gtt. x.
Aquæ menth. pip. . q. s. ad f℥ij.—M.

Should there be much flatulence, mucus in the stools, straining, vomiting, and fever—in other words, the symptoms of entero-colitis—the castor-oil prescription is the one to be preferred, and he advises the salicylate of soda in half-grain doses to be incorporated with it.

When the stomach is very irritable, all feeding should be avoided by the mouth; and in such cases an enema of gum-arabic water with the yelk of an egg, about two ounces every three hours, immediately after a stool, may be given till the stomach is tolerant. When the bottle is resumed he advises boiled milk prepared with arrowroot or rice in small amounts.

He uses white whey freely in cases where there is much prostration, made less laxative by mixing with toast water or gum-arabic water. The mucous membranes certainly are affected by the heat as well as the serous membranes, and on that account the temperature of these cases should be watched and controlled by refrigerant measures, or even quinine or antifebrin. Undoubtedly a large proportion of cases of summer diarrhœa are due to some septic influence, especially when they assume the choleraic form. The suddenness of onset, the evidence of vasomotor paralysis, the exhaustive discharge, call for immediate treatment of the most energetic character. The mild, unirritating diet which has just been outlined should be rigidly enforced; without it, medicinal treatment is of little avail. The child should be frequently sponged to keep the temperature down and the skin active. Sweet spirits of nitre should be used to keep the kidneys active and as a sedative; and if the pain seems severe and the movements are watery and frequent, the following may be given at intervals of one hour:

℞.—Hydrarg. chl. mitis . . . . gr. $\frac{1}{12}$.
Pulv. Doveri . . . . gr. $\frac{1}{2}$.
Sodæ bicarb. . . . . gr. j.—M.
Ft. chart. j.

Should there be vomiting and a profuse serous diarrhœa with pain, the following will probably answer better:

℞.—Morphiæ sulph. . . . . gr. $\frac{1}{4}$.
Acid. sulphuric. aromat. . . . gtt. xxxij.
Spts. vini gallici . . . . ʒj.
Syr. acac. . . . . fʒss.
Aq. menth. pip. . q. s. ad fʒij.—M.
Dessertspoonful every two hours for a child a year old.

Or, if there is any reason to contraindicate the use of morphia, use the following:

℞.—Sodæ salicylat. . . . . gr. viij.
Spts. chloroformi . . . . gtt. xxxij.
Syr. zingib. . . . . ʒj.
Syr. acac. . . . . ʒij.
Aq. menth. pip. . q. s. ad fʒj.—M.
Teaspoonful every hour. Shake well.

If in these cases the vomiting still persists, the following has served a good purpose:

℞.—Sodæ salicylat. . . . . gr. j.
Bismuth. subnit. . . . . gr. j.
Pulv. acaciæ . . . . . gr. ij.

Repeated every hour; and sustain the child by very small quantities of wine whey—not more than a teaspoonful at a time.

When excellent and powerful astringents and opiates are required, use the following:

℞.—Tinct. kino comp.[1] . . . . gtt. xl.
Syr. rhei aromat. . . . . fʒj.
Spts. vini gallici . . . . fʒj.
Syr. acaciæ . . q. s. ad fʒj.

Sig.—Teaspoonful in water after every movement; and this formula can be varied by adding bismuth salicylate, or chalk if necessary, or dilute or aromatic sulphuric acid.

In all cases of cholera infantum the antiseptic treatment is the most valuable, using creasote, carbolic acid, resorcin, calomel, corrosive sublimate, p. r. n.

Dr. Keating was one of the first to advocate the use of the salicylate of soda in this form of diarrhœa, using salicylic acid in half grain doses with the preparation known as soda mint. Its advantages are that it is cholagogue as well as antiseptic.

EPISCOPAL HOSPITAL.

DR. F. P. HENRY, in the treatment of summer diarrhœa, believes intestinal antisepsis to be an important indication. Convulsions, or other symptoms of profound intoxication, occurring at the outset of such an attack, may be reasonably attributed, in the absence of direct chemical proof, to the presence of tyrotoxicon or other poisonous ptomaines, in the ingested food. The same symptoms occurring at a later stage, are more probably due to the formation of such substances in the intestine, for it is established that they are produced in abnormal quantity in catarrhs of the gastro-intestinal tract. Whether introduced from without or formed within, an attempt should be made to prevent their disastrous effects upon the system. With this object in view, he has recently prescribed, with excellent results, the sodium salicylate, as recommended by Dr. Emmett Holt, of New York. He gives it with bismuth, as in the following formula:

℞.—Bismuth. subnitrat. . . . ʒj.
Sodii salicylat. . . . . ʒss.
Syr. acaciæ . . . . ʒj.
Aquæ . . . q. s. ad ʒij.—M.

For a child of from one to three years of age, a teaspoonful may be given every two or three hours. For older children, able to swallow a pill, thymol, which is undoubtedly one of the best known intestinal antiseptics, may be administered. It may be given in doses of one grain three or more times daily. It is very insoluble, and is best made into a pill with medicinal soap.

With reference to the still more important question of diet, it is sometimes necessary for a child to abstain for a time from its customary supply of milk, and live on mutton broth, clam juice, and barley water. In certain cases, milk appears to undergo changes which render it irritating to the bowels, and poisonous to the system. A substitute for milk may be found in some one of the numerous foods for infants, of which the soluble food of Carnrick is one of the best.

MEDICAL PROGRESS.

NAPHTHALOL.—KOBERT, of Dorpat, writes as follows regarding the use and constitution of this substance, in the *Therapeutische Monatshefte* for May, 1887:

Salol was introduced by Nencki, of Berlin, who sought to substitute a less irritating compound for sodium salicylate. It was made by putting in the place of the salicylic radicle phenol or carbolic acid, to the extent of 38 per cent. When given in amounts of ʒi ½ or ʒ2 daily, unpleasant cerebral symptoms have followed, referable to the carbolic element in the compound.

[1] This preparation, well known in Philadelphia, contains gum, camphor and opium.

Naphthalol is formed by substituting for the carbolic element, a less irritating substance known as beta-naphthol. Kobert has experimented with the following results, using this compound:

1. This substance is insoluble in water, odorless, tasteless, and is not dissolved or decomposed by the acid contents of the stomach, or by pepsine.

2. In contrast to the above, this substance is readily decomposed by the pancreatic ferments, and by the ferments produced by the mucous membrane of the living intestine. Salol, made with carbolic acid, is decomposed by pancreatic ferment only.

3. The mucous membrane of the large intestine in its upper portion, possesses the same power of decomposition as that of the small intestine; this property is diminished in the lower portion of the bowels.

4. Gastric disturbances and cerebral confusion were not produced by doses of four and a half to eight grains four times daily.

5. This substance appears in the urine in the same form in which salicylic acid appears—as a body turning ferric chloride a violet color.

6. Its continued use was well borne; animals bear forty or fifty grains for two days without injury.

7. In vesical catarrh, with alkaline and foul urine, its effects are most happy; the urine becoming clear and acid, and pain decreasing.

8. It is useful in acute joint rheumatism, and indicated in intestinal decompositions.

9. When added to culture materials it is not so powerful an antiseptic as phenol salol.

Palliative Incision in Tuberculous Peritonitis.—Breisky has operated upon a case as follows:

The patient was a woman, in whose case a diagnosis of ovarian tumor had been made. On examination pulmonary tuberculosis was found; no tumor of the abdomen or affection of the uterus and appendages was present; the abdomen was filled with fluid. Aspiration gave twelve quarts of clear serous fluid, whose examination was negative. High fever continued, and the fluid accumulated again in eight days.

On incising the abdomen an extensive tuberculosis of the intestines was discovered, the genital organs being free. A small piece of peritoneum was excised for examination, and the wound dressed with iodoform gauze. Abdominal trouble ceased entirely after the operation; healing by first intention followed. The pulmonary tuberculosis was not influenced by the operation.—*Centralblatt für gesammte Therapie*, June, 1887.

Terpine and Terpinol.—Chéron gives the following formulæ for terpine—hydrated turpentine—and terpinol—an oily, volatile derivative of terpine, made by boiling terpine with pure water, or water acidulated with hydrochloric or sulphuric acid.

Terpine	gr. 75.
Glycerine	
Alcohol (95 per cent.)	āā ℥ 2½.
Simple syrup	

Terpine may be given to the extent of eight grains daily for chronic bronchitis, and in the same quantity for neuralgia.

Terpinol may be given in capsules or pills.

Terpinol,	
Benzoate of soda	āā gr. 1½.
Sugar	q. s.

for each pill or capsule. It may be dissolved in vaseline, fifty per cent., and given hypodermatically. It may also be used by Bergeon's method of rectal injections, the carbonic acid gas serving as a vehicle. It is indicated where turpentine has been given, especially in bronchitis.—*Revue Générale de Clinique et de Thérapeutique*, June 2, 1887.

Extirpations of the Larynx.—In the *Deutsche medicinische Wochenschrift* of June 2, p. 470, Dr. Eugene Cohn reports some additional operations by Dr. Hahn, and sums the results of the nine previous total extirpations by that surgeon, reported in Volkmann's *Klinische Vorträge*, Heft 260. The new cases are as follows:

I.—Shoemaker, aged sixty, from whose larynx several portions of carcinomatous tissue had been removed laryngoscopically, the tumor augmenting meanwhile, and becoming perceptible externally. The tumor involved both vocal bands and portions of the arytenoid and thyroid cartilages. Feb. 17 a low tracheotomy was done with some difficulty on account of the little space available, and ossification of the cartilages. An iodoformized compressed sponge canula was introduced; the incision was extended up to the hyoid bone, and the larynx was divided anteriorly to ascertain the dimensions of the growth, which extended as far down as the upper two rings of the trachea, and as high up as to involve the epiglottis. The hyoid bone was separated from the muscles of the lower jaw, and then hyoid bone, epiglottis, the entire larynx, and the two tracheal rings were detached from above downward. The hypoglossus nerve and the lingual artery were wounded. Considerable bleeding ensued from the upper corner of the wound, which was repressed with wood-wool tampons, and arrested by ligatures after the detachment of the larynx had been completed. The wound was tamponed with iodoformed gauze, and covered lightly with carbolized gauze. The patient coughed several times directly after the trachea had been opened, and an extensive emphysema ensued, reaching from the middle of the chest up to the eyes. Rigor occurred on the fourth day; facial erysipelas developed from the nose, and extended the next day over both cheeks. Death on the eleventh day. Autopsy: Erysipelas faciei et capitis; tracheitis et bronchitis; pneumonia catarrhalis.

II.—May 29, 1886. Tradesman, aged fifty-one. Dysphagia of a year's duration; hoarseness; dyspnœa; weakness. Intralaryngeal treatment had been of no avail. A grayish, irregular tumor beneath the epiglottis, on the left side, nearly occluded the larynx. Low tracheotomy, insertion of the iodoformed sponge canula, and incision, as above. Exposure of the larynx and laryngo-fissure. The tumor extended into the upper end of the trachea. The larynx was severed just above the cricoid cartilage and then detached, in part with the thermocautery, from below upward, together with the epiglottis and the hyoid bone. The extirpation was completed by removing the cricoid cartilage and the two upper rings of the trachea. The œsophagus was stitched to the skin. Moderate bleeding, arrested

with wood-wool tampon. Dressings in case I. The course of the case was remarkably good. On the second evening only the rectal temperature reached 38.8. The sputum was not bloody, even directly after the operation. The tampon canula was changed for an ordinary one in twenty-four hours. The general well-being was not disturbed, respiration through the canula was free, and there was only a slight bronchial catarrh. The patient was fed twice a day through the tube; and was quite late—six weeks—learning to swallow first solid, and then fluid nourishment. About the same time an artificial larynx was introduced, and the patient learned to speak with it so as to be understood.

August 11th dismissed from the hospital. In November the patient wrote that he had severe pain in swallowing and distressful salivation. In March, 1887, he wrote that his sufferings had increased, and that for some months he had been conscious of a hardening in his throat, which had increased very much. He was so ill that he dreaded to leave his home. In this case, therefore, there had been recurrence in all likelihood.

III.—Man, æt. fifty-four, hoarse for a year. An irregular, grayish tumor, imbedded in nearly the whole left vocal band, and microscopically a cornifying cancroid. Tracheotomy, tamponade, laryngo-fissure; extirpation of left half of larynx, except the cricoid cartilage. Course normal. This is Semon's case, *Brit. Med. Journ.*, No. 1351.

IV.—In this instance a proposed extirpation was found unnecessary at the time. A merchant, æt. thirty-seven, relieved several times of dyspnœa from a small laryngeal tumor, by intralaryngeal evulsions; but the last operation, three days before, had given no relief. Operation immediately on entrance. High tracheotomy; tamponade; laryngo-fissure. A hard, circumscribed tumor, ulcerating superficially, reached as far as below the right vocal band. The tumor was so superficially implanted, and so circumscribed, that laryngectomy seemed unnecessary, and the ulcerating mass was scraped out and the parts seared with the thermo-cautery. Iodoform tamponade of the wound. The canula was changed for an ordinary one on the next day, and this was permanently removed on the twentieth day. On the thirty eighth day the patient was dismissed with free respiration, and a good, though hoarse, voice. Recurrence in the same locality, three months after operation. Partial resection of the larynx may become necessary.

Concerning the subsequent history of Hahn's nine previous total extirpations for carcinoma and sarcoma, two are dead from recurrence—one six months, the other (sarcoma) four months after operation. One, operated on in 1880, still lives, seventy-five years of age, is hearty, and speaks with an artificial larynx. Another is living, but has had recurrence. Of the entire ten cases of total exturpation, four died within a few weeks—one of erysipelas, one of mediastinitis, one of pleuritis and pulmonary gangrene, and one of pneumonia.

Of the four partial resections none died from the results of the operation. Two of these were for carcinoma. In one there was recurrence within four months, and then the exturpation had to be made complete.

REVIERE'S SEDATIVE POTION.—DR. GENEUIL suggests the following modification of this well-known and valuable officinal preparation where there is vomiting, accompanied and caused by hepatic or enteric pains:

R.—Hydrochl. of morphine	. . .	gr. j.
Cherry laurel water	. . .	℥ijss.
Sulphuric ether	. . .	℥j.
Water to make	. . .	℥vij.

Mix, dissolve, and divide into two equal parts. To the first add one drachm of bicarbonate of potassium and one ounce of syrup of orange flowers. To the second add one drachm of citric acid and one ounce of aromatic syrup of citric acid (flavored, if desired, with essence of lemon). A tablespoonful of each mixture to be administered (by itself) every five minutes until relief is obtained. The alkaline syrup should be given first. If the pains are not very severe, or the patient be very nervous, the morphine may be replaced by double the indicated quantity (or two grains) of codeine.—*Technics*, May 17, 1887.

PEPTONES IN THE BLOOD AND URINE.—GEORGES is quoted by the *American Journal of Pharmacy* for May, 1887, as giving the following methods:

1. This has been recently employed by Wassermann for the detection of peptones in the blood. The blood is received in strong alcohol; the clot thrown on a filter is washed first with cold then with boiling water; the aqueous solution is concentrated to about double the volume of the blood taken, and then added to the alcoholic solution; sodium acetate and ferric chloride are now added to the liquid. After filtration and cooling, the last traces of albumen are removed by adding potassium ferrocyanide and acetic acid, filtered, the excess of ferrocyanide precipitated by copper acetate, filtered, excess of copper removed by hydrogen sulphide; filtered again, and heated on the water-bath to expel hydrogen sulphide and to concentrate the liquid. This method gives good results, especially if care be taken to neutralize, or even to add any slight excess of alkali on adding the sodic acetate and ferric chloride. It also serves very well for the investigation of peptones in urine, commencing by boiling to precipitate albumen coagulable by heat, and terminating as above.

2. The double iodide of potassium and mercury precipitates albumen and the peptones, and Tanret has shown that the albuminous precipitate is insoluble in boiling acetic acid, whilst the peptone precipitate dissolves completely. Employing these reactions, Georges has established a much more rapid method as follows: Precipitate by heat all the coagulable albumen; treat the urine with acetic acid and the double iodide, wash the precipitate on a filter with cold water charged with acetic acid to the same extent as the urine; wash again with the same acidified water boiling, keeping the washings apart. The clear liquid obtained gives a precipitate on cooling if the least trace of peptonic precipitate has been dissolved. It is only necessary to neutralize in order to obtain a solution to which the double iodide test can be applied.

USEFUL PREPARATIONS OF IODOL.—DR. WOLFENDEN, of London, mentions in the *Practitioner* for May, 1887, the following as preparations which he has found useful:

1. *Powder of Iodol.*—The pure powder may be used.

There is no need to mix it with starch or sugar, etc., since, being fine, it is readily dusted over a raw surface, or insufflated into the throat. Possessing no toxic power, it is of more importance to cover the diseased surface than to measure the dose. For all laryngeal, pharyngeal, and most nasal and oral conditions this is, perhaps, the most generally useful application.

2. *A solution in Alcohol and Glycerine.*—This was Mazzoni's original application: iodol, 1 part; alcohol, 16 parts; glycerine, 34 parts. This forms a good application by means of the brush, or may be used as a very coarse spray.

3. *Iodol*, 1 *drachm*; *Ether*, 1 *ounce*.—This forms a clear brown solution, useful for application either by the spray or brush. The ether quickly evaporating leaves the powder *in situ*. It is useful for naso-pharyngeal atrophic conditions.

4. *Iodol*, 1 *drachm*; *Glycerine*, 1 *drachm*; *Vaseline*, 7 *drachms*.—This is a modification of one of Rumbold's sprays. It is a very soothing application for pharyngeal conditions. It requires to be warmed before using.

5. *Iodol Pastilles*.—(Iodol, 1 grain; glycerine, 1 minim; glycogelatine, 18 grains.) These are very useful for chronic pharyngeal conditions, and are much preferable to iodoform pastilles.

6. *Iodol Bougies*, containing ½ a grain iodol in each. These are made for use in diseased nasal conditions.

7. *Iodol Wool*, 10 per cent., for tampons, etc.

8. *Iodol Gauze* for dressings.

Laparotomy for Tubercular Peritonitis.—Kümmel, of Hamburg, at the recent meeting of the German Surgical Congress, reported two cases of tubercular peritonitis treated by laparotomy, as follows:

The first was the case of a young woman in whose abdomen encysted dropsy existed, in which the retro-peritoneal glands were found; the cavity was studded with miliary tubercles. The abdominal cavity was disinfected and sutured; perfect recovery followed.

The second case was that of a man, aged twenty, who had ileus after an operation for caries of the os calcis. The intestine was found almost ligated by adhesions. By enveloping the intestine in carefully antisepticized napkins the adhesions were severed, the tissues properly united, and the abdomen closed. Recovery followed, but general tuberculosis followed later.

Kümmel cited 30 cases, of which 25 were well at the time of his report. In 11 cases the diagnosis was confirmed by the microscope.—*Berliner klinische Wochenschrift*, May 23, 1887.

Fournier's Treatment of Scabies.—1. A thorough application of soap, followed by a full bath.

2. Frictions over the body with the following mixture:

Glycerine	2 parts.
Gum. tragacanth.	$\frac{1}{100}$ part.
Flowers of sulphur	1 "
Sodium carbonate	½ "

after which a second bath must be taken; the personal and bed linen should be carefully laundried, and gloves which have been worn should be burned. On the day following, emollient baths and the use of powdered starch, or glycerite of starch will be found useful.—*Les Nouveaux Remèdes*, May 24, 1887.

Results of Treatment for Diphtheria in the Oldenberg Hospital.—Lunin reports 296 cases, of whom 164 died; 57 were treated with sublimate applications 1 to 1000, and washing out the pharynx with 1 to 5000; of these patients the mortality was 43 per cent. In a series of cases treated with resorcine 10 to 100 and irrigations with a solution of 1 to 100, the mortality was 65 per cent.

Pencilling the fauces with lanoline 1 to 10, and irrigation with alcoholic solution of lanoline, 2 to 100, was employed in 28 cases, whose mortality was 53 per cent.

94 cases were treated with ferric chloride, 1 or 2 drops every half hour. The mortality was 56 per cent. In addition the pharynx was irrigated with boric acid solution, 1 to 300. The treatment with bromine water gave a mortality of 69 per cent, and treatment by essence of turpentine, 10 drops every hour, 43 per cent.

The statistics are not sufficient to establish the value of any medicament. Turpentine gave the best results in the fibrinous form and iron in the phlegmonous form. Laryngeal complications were treated by inhalations and a solution of sodium bicarbonate, corrosive sublimate, and apomorphia internally, and, as stimulants, the free use daily of tea and rum.—*Gazette Hebdomadaire*, May 27, 1887.

Cæsarean Section in Holland.—Maasen, of Holland, is reported, in a recent Dutch medical journal, to have performed Cæsarean section on a primipara, a dwarf, the *conjugata vera* of whose pelvis was two and one-third inches. The wounds healed in twelve days, and mother and child made a perfect recovery.

Maasen attributes his success to antisepsis and to having abstained from attempts to deliver by forceps.

Tracheotomy in the Charité Children's Hospital at Berlin.—After eliminating twenty-five children under two years of age, there were, out of 128 cases, 20.4 per cent. of cures for croup, and 18.75 per cent. of cures for diphtheria. It is not necessary to perform the operation after the first attack of asphyxia.—*Journal of Laryngology*, May, 1887.

Buror's Fluid.—This liquid is used where the antiseptic dressings, for any reason, cannot be applied. Its formula, from the Pharmacopœia of Belgium, is as follows:

Crude alum	75 gr.
Crystallized potassium acetate	12½ ʒ.
Distilled water	1 quart.

Mix, dissolve, filter.

For external use only.

The Diagnosis of Cancer by the Examination of the Blood.—Hayem has recently read a paper on the leucocytosis accompanying the development of neoplasms. A cubic millimetre of blood should yield normally 6000 white blood-corpuscles, but the numerical fluctuations are greater for white than for red blood-corpuscles. Hayem, assisted by M. Alexandre, draws the following conclusions: Scirrhus and encephaloid cancers are accompanied by a slight increase in the number of white blood-corpuscles. The leucocytosis is much more marked with osteo-sarcoma and lympho-sarcoma.

Epithelioma has the least influence in inducing an increase in the white corpuscles. Hayem believes that the leucocytosis may prove of diagnostic service, and mentions a case of doubtful epithelioma of the foot in which M. Alexandre counted 14,000 white globules per cubic millimetre; it was thought during the life of the patient, from this circumstance and from the absence of inflammatory complications, that the disease might be cancerous. The case terminated fatally after operation, and the necropsy revealed several visceral neoplasms of encephaloid structure.—*Lancet*, June 4, 1887.

Lithotomy in Russia.—At the Second Congress of Russian Surgeons, held at Moscow, Nikolsky reported the results of lithotomy as practised by Russian surgeons. 318 cases of the lateral operation were reported with 30 deaths; 29 median operations with 1 death, and 51 suprapubic lithotomies with 14 deaths. The choice of lithotomy over litholapaxy is accounted for by the fact that these patients commonly seek surgical aid when the calculi have become very large and crushing was impossible.

Nikolsky formulates his indications for the various operations as follows: If the stone be large and smooth, the urine relatively normal, and the surgeon hopes to remove the stone quickly, as well as when the stone is in a pocket of mucous membrane, the suprapubic operation is indicated. When the stone is small in adults, and the urine nearly normal, the median incision is preferred. If the bladder is hypertrophied, the lateral incision is made. When severe cystitis is present, the bladder is treated as an abscess cavity and drained by the lateral incision.—*Centralblatt für Chirurgie*, May 28, 1887.

Phosphorus and its Administration.—Soltmann condemns all aqueous preparations of phosphorus, and recommends the oily preparations, and especially an oily solution of 1 to 500. In its preparation three grains of phosphorus are dissolved in three and one-eighth ounces of oil of almonds over a water bath; when the phosphorus has been previously thoroughly dried and the process is carefully conducted, the phosphorus is never deposited. The physician may order as follows:

℞.—Phosphori . . . . . gr. $\frac{1}{10}$
Ol. morrh. . . . . ʒ 3ss.—M.

Sig.—Daily one teaspoonful, which may be conveniently dispensed by adding five grammes (ʒ $1\frac{1}{4}$) of the almond oil solution of phosphorus to ninety-five grammes (about three ounces) of cod-liver oil.

The following formula may also be employed.

℞.—Phosphori . . . . . gr. $\frac{1}{10}$
Ol. amygdal. amar. . . . ʒ $2\frac{1}{2}$
Aquæ destill. . . . . ʒ 20
Gummi arab. . . . . ʒ $2\frac{1}{2}$.—M.
Ft. emuls.

Sig.—One teaspoonful daily.—*Therapeutische Monatshefte*, May, 1887.

Sterilized Bandage Material.—At the recent meeting of the Society of German Surgeons, Schlange, of Berlin, made some remarks upon materials for dressing wounds, which we summarize as follows: None of the dressings at present used and impregnated with antiseptics, perfectly destroy bacteria in wounds. It has been shown that sublimated gauze, when immersed in blood or hydrocele fluid, permits the growth of bacteria, because the sublimate enters into combination with a portion of the albuminoids, and the bacteria flourish in the remaining albumen, which becomes a culture medium.

Schlange advised the use of dressings as prepared for Bergmann's clinic, by sterilization with hot steam at 100° C., and drying. The impregnation with sublimate is omitted. Such sterilized dressings are placed upon the wound.

Volkmann advised the retention of iodoform as an antiseptic, and described his custom of placing iodoform gauze immediately upon the wound, and over that a peat-bag without any antiseptic substance. Lister's dressing, he thought, was often a fomentation to a wound. He had excellent results with this treatment.

Von Bergmann thought that our study of the treatment of wounds should now be directed to finding a perfectly sterile dressing.

Kohler thought sublimate gauze, for army service in the field, a sterile dressing.—*Berliner klinische Wochenschrift*, May 30, 1887.

A Formula for the Use of Bismuth in the Summer Diarrhœas of Children.—

℞.—Bismuth. subnit. . . . . gr. 10.
Mucilag. trag. . . . . ♏ 20.
Aq. chloroform. . . . . ʒj.

for a child seven months old, every six hours.—Dr. Angel Money, in *Treatment of Disease in Children*.

Poisoning by Pilocarpine.—Dr. A. G. Glinsky, of the Kharkov Alexandrovskaia Infirmary, reports (*Proceedings of the Kharkov Medical Society*, part 1, 1886, p. 109) a case of poisoning by pilocarpine—the first of its kind, according to the writer, in medical literature. A gentleman who had been in the habit of using a solution of pilocarpine as a stimulant for the hair, swallowed a considerable dose of the fluid, instead of a solution of quinine. About five minutes afterward profuse perspiration, first of the face and then of the whole body, set in, together with salivation. These symptoms were speedily followed by dimness of sight, prostration, trembling of the limbs, a sensation of cold, noise in the head, and a general sense of confusion. On seeing the patient, about an hour after the accident, Dr. Glinsky found profuse, cold, clammy sweat in big drops on the face and body, coldness of the limbs, slight cyanosis of the hands and lips, a subnormal temperature, pulse 84, full, dicrotic, respirations 14, profuse salivation, great contraction of the pupils, spasmodic shiverings, general restlessness, extreme weakness, and trembling of the lower extremities. The treatment consisted of the internal administration of tannin, and emetics, together with the hypodermatic injection of atropine ($\frac{1}{30}$th of a grain, given in three doses). A quarter of an hour after the injections a striking improvement took place; the perspiration ceased, the pupils became dilated, and tremor disappeared, and on the following day the patient was quite well.—*British Medical Journal*, May 21, 1887.

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SATURDAY, JULY 16, 1887.

THE TREATMENT OF SYPHILIS BY HYPODERMATIC INJECTIONS OF MERCURY.

NOTWITHSTANDING the fact that this method of treating syphilis has been before the profession almost ever since the introduction of the hypodermatic use of drugs by Alexander Wood, of Edinburgh, in 1857, it is only within the last year or so that it has in reality received much attention. In 1861, Hebra used injections of corrosive sublimate in the treatment of a papular syphilide occurring in a woman of twenty-one years with success (*Allgem. Wiener med. Zeitung*, 1861, No. 30), but it was not until 1864 that calomel was used in this manner, suspended in a gummy liquid, in the proportion of one-third to one-half of a grain of calomel to twenty-five minims of water or glycerine by Scarenzio, whose report may be found in the *Annales Universelles de Médecine*, 1864.

Berkeley Hill, Ambrosoli, Ricordi, and Montefork, the first in the *Lancet*, in 1866, the last in an inaugural dissertation at Marburg, in 1869, were the next observers to record their experiences with this method, and since then the number of observers has increased to such an extent as to render an attempt at any further historical sketch impossible. Suffice it to say that till lately corrosive sublimate has been much more generally used in this manner than has its more insoluble sister salt calomel, although for some unknown reason the latter preparation seems to be the favorite just at present. Within the last few months a larger number of papers have appeared on this subject than have usually come out in several years. ZEISSL, in the *Centralblatt für die Gesammte Therapie* for June, 1887, gives a very interesting sketch of the use of mercury in this manner, both historical and therapeutical, and another equally interesting paper appears in the *Gazette médicale de Paris* for 1887, Nos. 22 and 23, in which the use of calomel is alone considered.

It at once becomes evident to the thoughtful physician that calomel is, to say the least, a most unfavorable variety of remedy for such a use owing to its insolubility, whereby it is liable to cause inflammation or abscess more rapidly than a systemic influence, and this theoretical deduction has, to a certain extent, proved practically true, although the occurrence of well-developed abscess has been comparatively infrequent, the percentage of their occurrence varying from fourteen to four per cent. of all the cases treated. This variation in the frequency of abscess under this treatment may, of course, have many factors back of it, the most important being cleanliness and the character of the vehicle used by the different observers. The general opinion seems to be that vaseline is by far the least irritating and best vehicle used for this purpose, but, nevertheless, inflammatory conditions are common sequences of its use and come on with sufficient frequency to prevent its general employment.

Other vehicles for administering calomel in this manner have been saline solutions, made by the addition of common salt to distilled water in the proportion of five parts of salt and fifty of water, but the results have been still less favorable. If we consider for one moment the fact that calomel is, when taken internally, dissolved by the gastric acid and then precipitated by the alkaline juices of the intestines, it at once becomes clear that in its injection into the connective tissue it meets no acid, but rather an alkali, and remains undissolved to a very great extent by the juices of the surrounding region. Practical experience has shown, however, that salivation may be produced by its hypodermatic use, thereby proving that it is to some extent absorbed.

The use of corrosive sublimate by the subcutaneous method is hardly more sensible than the corresponding use of calomel, for although it is nonsoluble and less apt to act as a passive foreign body, it is far more irritating. The same chemical objection also obtains here, namely, the fact that an acid salt is to be brought in contact with alkaline juices, and there seems to be no more reason for making such a combination hypodermatically than there is for so doing in a prescription for internal use.

The advantages accruing from such a line of treatment are not readily perceived, and when at last they are discovered are so small as compared to the disadvantages as to lose all weight. Of course, cures and favorable results have been obtained from such practices, as is often the case, be the remedy what it may; but the very fact that this method has remained comparatively unused, except as an ex-

periment for so many years, is at least a good example of the common sense of the medical profession in general, and should prevent the physician from putting into execution any such procedure unless some peculiar chain of circumstances renders it necessary, as in the case of localized gummata situated in dangerous but yet readily approached positions, the rapid breaking down of which may prolong or save life.

CARDIAC DYSPEPSIA.

For a long time it has been recognized that various forms of cardiac disorder, such as palpitation, irregular action, intermittence, syncope, and even angina, may be due to an irritation reflected from a diseased gastric mucosa. It is only of late, however, that cardiac disease has become a recognized factor in the production of gastric disorder. The two conditions, cardiac and gastric disorder, whether functional or organic, are almost invariably associated, and it is a difficult, and often an important, problem to decide which of them is primary. An attempt to render this easier has been made by Dr. Solaro, in *La Medicina Contemporanea*, for March, 1887, who takes as the text of his discourse the Paris thesis of Müller for 1886.

According to Solaro, three types of cardiac dyspepsia may be recognized: 1. A nervous form in which pain is the principal element. The pneumogastric is tender in its accessible points, and there are frequent attacks of gastralgia and pyrosis. As the case progresses the par vagum becomes exhausted, the muscular tunic of the stomach loses its tonicity, and the viscus is in a state of permanent dilatation. This variety is observed in cases of angina pectoris, in exophthalmic goitre, and, in general, in those cardiac diseases in which the nervous element predominates.

2. An anæmic form, distinguished by pain which is acute but fugitive. The digestive functions are accomplished slowly but, in comparison with the former variety, satisfactorily. This form is peculiar to aortic lesions, stenosis, and insufficiency, in which there is either a continual diminution of arterial pressure (stenosis), or the organs are intermittingly supplied with arterial blood (insufficiency).

3. A congestive form in which, while the pain is less severe, the functional disturbances and the lesions of the stomach are much more pronounced. This variety depends upon lesions of the mitral valve, and upon those of the right heart.

It is only in the latter form that typical alterations of the stomach are encountered. The organ is usually dilated, and its walls thickened and congested. The mucosa is covered with a grayish, transparent mucous, or, in more severe cases, with a whitish, pultaceous exudate, resembling a diphtheritic false membrane. This being removed, the mucosa is red, infiltrated with serum, suffused with extravasated blood, or riddled with a multitude of minute erosions. The veins are varicose, and more or less dilated. Many of the peptic glands are atrophied, and their cells filled with fat granules. Atheroma of the gastric arteries is encountered, especially in those cases in which the same lesion exists in the aorta.

The disastrous effect upon nutrition of these secondary gastric changes is manifest without recalling the fact that the only possible *raison d' être* of several fatal cases of pernicious anæmia had been found in similar lesions.

In the treatment of cardiac dyspepsia the pathogenesis of each variety is to be borne in mind. In all three forms the ordinary eupeptics are indicated, while in those of nervous origin, washing out the stomach has been found to be an excellent sedative. In the second and third varieties the remedies are to be chiefly addressed to the heart, the *fons et origo mali*. In the anæmia of heart disease, the *cachexie cardiaque* of French writers, good results have been reported from the use of arsenic.

THE PROGNOSIS IN THE CROWN PRINCE'S CASE.

As we stated last week, the latest professional reports of the condition of the larynx of the German Crown Prince are not at all indicative of malignancy; and now, in view of the apparent success of the operative treatment, the question as to the liability to recurrence of the growth becomes of the greatest interest. In our opinion the commonly estimated ratio of recurrence of papilloma in the larynx is far too high, and many so-called cases we believe are simply recrudescences of fragments of imperfectly removed growths. As a rule a patient, especially if away from home, passes from under treatment as soon as possible after obtaining relief from the malady for which he sought advice; and often, in cases of papilloma, with remnants of the growth unremoved. Hence it is of importance to keep a patient under observation for several weeks after the cessation of operative procedures.

Fresh growths, however, are liable to occur in a larynx, which has been previously the seat of papilloma, just as the earlier growths did in the first place. This does not often happen unless the individual is extremely careless in exposing himself to cold, or in over-using his voice especially when hoarse—conditions that aroused the morbid activity which culminated in the original growth. For these reasons we are inclined to believe that, under proper supervision, and with the exercise of ordinary prudence as to exposure and the use of the voice, neither recurrence of the old growth nor development of a new growth in a fresh location is to be feared in a

larynx carefully freed from papilloma and kept under observation for a reasonable period thereafter.

SOME PHYSICAL DIFFERENCES BETWEEN MEN AND WOMEN.

IN an article upon the "Mental Differences between Men and Women," which lately appeared in *Nineteenth Century*, GEORGE J. ROMAINES claims that, as the average brain-weight of women is about five ounces less than that of man, on merely anatomical grounds we should be prepared to expect a marked inferiority of intellectual power in the former. This difference, he states, is proportionally greater than that between the female and male organism as a whole, and is largely affected by the grade of civilization, being least in savages.

Upon the authority of Sir J. Crichton Browne, he strengthens this view as to the brain inferiority of the female, by the further statement that from investigations now being made by the latter, not only is the gray matter of the brain less deep in the case of the female than it is in that of the male, but also receives less than a proportional supply of blood. For these reasons, and also because the differences begin in embryonic life, Browne regards them as "constituting a fundamental sexual distinction, and not one that can be explained on the hypothesis that the educational advantages enjoyed either by the individual man or by the male sex generally through a long series of generations, have stimulated the growth of the brain in the one sex more than in the other."

As is well known, the differences between the male and the female pelvis, the latter indicating very clearly its adaptation to childbearing, are very obvious, so that the two, when typical forms are observed, may be readily distinguished.

Here, too, there is a corresponding fact to that stated as to the relative difference between the brain of man and that of woman, this difference being less marked in savage races, for in the pelves of the lower races the sexual characteristics are less obvious; that is, the male and female pelvis resemble each other more closely. In some instances this resemblance is so great that it is difficult to distinguish between the two.

Romaines attributes the mental differences between men and women to the Darwinian principle of selection, both natural and sexual, by the one being meant the contest between rival males, and by the other success in the general struggle of life; and, using the words of Darwin: "as in both cases the struggle will have been during maturity, the characters gained will have been transmitted more fully to the male than to the female offspring."

But conceding this as the explanation of the larger brain of the male, and hence the greater mental power, how is the pelvis of the female made to differ more strikingly from that of the male in the advancement of a race? Its final cause is quite obvious, for with a greater brain development there is corresponding increase in the size of the cranium, and there must necessarily be a larger bony birth canal through which it is to be transmitted. Its active cause may have been sexual selection, the successful male selecting the female whose general form, including that of the pelvis, differs most decidedly from that of the male, until in long generations and with the higher development of civilization the original difference becomes more marked until finally the typical female pelvis is produced.

THE Coroner of Philadelphia held an inquest last Monday on four of the cases of poisoning from eating buns colored with chrome yellow, to which practice public attention was first called by THE MEDICAL NEWS, six months ago. The use of chrome yellow to give a rich egg color to the cakes sold by the baker was proved, and the evidences of lead were found on chemical analysis in the viscera. The jury rendered a verdict, "That the deaths, in their opinion, were undoubtedly due to chronic lead poisoning, and that the poisoning resulted from the use of chromate of lead as a coloring matter in buns and other breadstuffs." The Coroner thereupon held the baker, in whose own family there had been six cases of poisoning from this cause, to await the action of the Grand Jury.

Suits to recover damages for sickness, suffering, and death have also been begun against several parties who are charged with adulterating, and causing to be adulterated, buns and cakes, and selling, and causing to be sold, "adulterated articles of food colored with injurious, fraudulent, and poisonous coloring matter."

IN another column we present an abstract of the report of the British Hydrophobia Commission, which constitutes the ablest defence of M. Pasteur's method which has yet been made, and it is a cause for congratulation that men so competent to observe facts and weigh evidence have been able, after full investigations, to reach a unanimous conclusion as to the prophylactic value of the inoculations of Pasteur.

THE anxiously-looked-for autobiography of the late DR. SAMUEL D. GROSS has just been issued from the press of George Barrie, in two very handsome octavo volumes, of over 400 pages each. The work treats of the men and times of Dr. Gross's long and active professional life, and cannot fail to prove of deep interest to a large circle of readers. We shall review it at an early day.

THE American Neurological Association will meet at the West End Hotel, Long Branch on July 20th, 21st, and 22d, under the Presidency of Dr. Landon Carter Gray, of Brooklyn.

THE yellow fever is reported to be slowly increasing at Key West. Last Saturday there were five new cases and two deaths. On Tuesday there were the same number of new cases and one death. The record to July 10th stands: Total cases, 83; deaths, 27; sick at present, 33; discharged cured, 23.

A temporary refuge station is being established by the Marine-Hospital Service at Egmont Key, where ten days' detention will be required, and disinfection of baggage will be carried out.

DOCTOR HENRY CARPENTER died at Lancaster, Pa., on July 9, 1887, aged sixty-eight. He was the fifth physician in a family of recognized ability in medicine and politics, and was one of the first students who matriculated at the Pennsylvania Medical College. After graduation he practised his profession at Lancaster, where he proved a skilful surgeon, obstetrician, and general physician. He was especially versatile in his talents, and combined good mechanical ability with excellent judgment. Both previous to and during the war of the Rebellion he rendered the Government valuable professional services.

Dr. Carpenter was also actively interested in politics, and in the development of the mercantile interests of his home; and his position in the community in which he lived was one of honor and influence.

REVIEWS.

EVACUANT MEDICATION. By HENRY M. FIELD, M.D., Professor of Therapeutics, Dartmouth Medical College, etc. Philadelphia: P. Blakiston, Son & Co., 1887.

THIS book is a concise *résumé* of the notes of extensive clinical observation as prepared for lectures, supplemented by study of the current literature of the subject. The author's purpose was "to provide a practical study of the individual action, application, and contra-indications of the more prominent cathartic agencies;" and this has been accomplished in a clear, forcible, and practical manner.

Among the many points of interest presented, we notice the endorsement of the commonly received doctrine of the emmenagogue properties of aloes; and the successful treatment of gonorrhœa by the vinous tincture of colocynth. The distinction between cathartics and cholagogues is sharply drawn, and the fact that hydragogues are depressants of bile formation is emphasized. The use of calomel receives the critical discussion which its importance justifies, and its position and dosage as a cholagogue are clearly defined.

A number of convenient formulæ are given, of which we quote the following, as valuable in administering castor oil in the treatment of dysentery:

R.—Ol. terebinth.	. . .	gtt. 80.
Ol. cinnamon.	. . .	♏ 5.
Ol. ricini	. . .	ʒ 5.
Mucil. acaciæ	. . .	q. s.
Syr. simpl.	. . .	q. s.
Aq. puræ	. . .	q. s. ad ʒ 2.

Sig.—Shake thoroughly. One teaspoonful, repeated as needed.

The author's presentation of emetic medication, and also "super vomition," is suggestive and valuable; the omission of cocaine from the remedies advised for obstinate emesis is, however, noticeable.

No remedies are more commonly used and abused than evacuants, and books of the practical value of Dr. Field's cannot fail to interest and serve the profession.

CORRESPONDENCE.

LETTER FROM MUNICH.

The Royal University—Laparotomy in Rupture of Uterus—Osteomalacia—Use of Anæsthetics—A New Work on Obstetrics.

THE number of students in the Royal University here is 3389. The medical department has 1186; of these, only 508 are Bavarians, the relative proportion of the foreign element marking well the reputation of the school. I saw two Japanese, and found several Americans among them.

Having seen in the report of the obstetrical department a number of cases of rupture of the uterus, and no laparotomies mentioned in connection, I inquired as to this point, and learned that there had been no case since Prof. Winckel took charge in which the circumstances justified the operation. This measure is fully recognized, and he has performed laparotomy for ruptured uterus three times, all the cases successful. The pelvis of one is in his collection, and is a most interesting specimen of osteomalacia. The professor and his father were about to perform the Cæsarean section when the rupture took place, and the laparotomy followed immediately. The patient lived fourteen years afterward.

There was an interesting case of osteomalacia in the wards. Patient, aged thirty-seven, had had eight children, the last several years ago. The pelvic deformity had advanced to such a degree that the finger could scarcely be passed between the rami of the pubes up to the symphysis. She was in bed, and having constitutional treatment.

In regard to anæsthetics. So far, chloroform alone has been seen here, and I am informed that this is the only anæsthetic used throughout Germany, except at Vienna, where Billroth uses a mixture of chloroform and ether. I can learn of no accidents, and when they were inquired for, the opinion seemed to be that they might and did occur under all anæsthetics, while chloroform presented great practical advantages over the others. Prof. Winckel expressed much dissatisfaction at what he witnessed of ether administrations during his visit to our country. Administration of chloroform here is by means of a small wire mask, just large enough to cover mouth and nose, over this is stretched a layer,

perhaps two, of some light material, and upon this the liquid is dropped or sprinkled. It is an unexceptionable method; first, negatively, air cannot be shut out from the patient; second, positively, it insures complete mixture of the vapor with air. This cannot be said of the administration by a towel upon which chloroform is poured, and there is no doubt that that mode of administration is one factor in causing fatal accidents. In one case in which there was a good deal of embarrassment to the respiration, the administrator bent the patient's head backward, and elevated the lower jaw by placing his fingers behind the rami.

The injection of narcotics a short time previous to the administration of chloroform, is not practised here. I called upon Prof. Nussbaum especially in regard to this point, because his name is connected with the very first steps of this practice. Neither morphia nor atropia, or the two combined, is given here or elsewhere in Germany, so far as I could learn. I was particular to inform myself in regard to this point, which I firmly believe to be one of the greatest practical value in connection with the administration of anæsthetics.

Prof. Winckel has in preparation, and nearly ready for publication, a new work on obstetrics. An entire new set of illustrations is promised, and those who are acquainted with his photographic illustrations of the pathology of the female sexual organs, will know what may be expected.

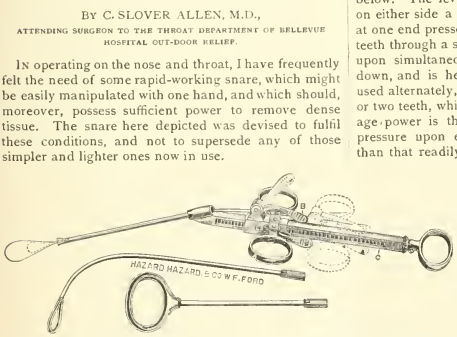
MUNICH, June, 1887.

NEW INVENTIONS.

A NEW SNARE AND ÉCRASEUR.[1]

BY C. SLOVER ALLEN, M.D.,
ATTENDING SURGEON TO THE THROAT DEPARTMENT OF BELLEVUE HOSPITAL OUT-DOOR RELIEF.

IN operating on the nose and throat, I have frequently felt the need of some rapid-working snare, which might be easily manipulated with one hand, and which should, moreover, possess sufficient power to remove dense tissue. The snare here depicted was devised to fulfil these conditions, and not to supersede any of those simpler and lighter ones now in use.



The power employed is not that of the screw, but of the lever, and is applied by means of a double lever, worked alternately by the middle and forefinger. As the instrument is made of steel, it will stand heavy work in operating on other parts of the body. It can be worked perfectly with one hand, while the other holds the speculum or mirror, and no part of the instrument or hand interferes with a clear view of the part operated on. The wire loop can be quickly and firmly contracted around the base of the tumor, and then, without delay, great power can be applied, and the tissue cut through as rapidly or as gradually as desired. The ends of the wire are quickly fastened or released by the simple movement of a lever, and will not slip. The laryngeal and post-nasal tubes can be inserted at different angles, so that the hand can be held in the most convenient position for working. The instrument is especially adapted for operations where rapid work is called for. The ends of all the tubes are flattened, so as to keep the wire loop from twisting, and to enable the operator to know its exact position. After cutting through, the slide can be released and pushed up to its former position by pressing back the catches on either side with the thumb and forefinger.

The different parts of the snare are not very clearly shown in the cut. The square shaft (*C*) is of steel, having at its upper end a socket for the insertion of the tubes, while at the lower end is a swivel thumb-ring. On either side of the shaft is a line of ratchet-teeth, which are countersunk, so as to allow the square tube to slide freely upon the shaft. Upon the upper part of this square tube there is a device for fastening the ends of the wire. It consists of a lever attached to an excentric, beneath which the wire passes when the lever is raised. When the lever is depressed (as shown at *B*) the wire is firmly pressed down upon the slightly roughened bed-plate. Strain upon the wire tends only to draw the lever down tighter, so that the wire will break before slipping. The two rings (*A*) are connected by a double lever which, at the centre, loosely surrounds the square tube or slide, and is pivoted to it above and below. The lever rotates on these pivots, and carries on either side a ratchet catch, pivoted in the arm, and at one end pressed down by a spring against the ratchet teeth through a slot in the slide. If the rings are pulled upon simultaneously, the wire may be quickly drawn down, and is held by the ratchet. If the fingers are used alternately, one ratchet is drawn down over one or two teeth, while the other holds fast. A great leverage power is thus exerted upon the wire. A slight pressure upon either ring develops a power greater than that readily obtained in instruments in which the screw is used.

The lower figure in the cut represents a modification for the removal of the tonsil. It consists of a split ring, between the sides of which the wire is concealed, and held in place by small projections. The ring having been pressed over the tumor in the usual way, traction with the fingers, exerted simultaneously upon the two arms of the lever, quickly draws the loop from the cleft of the ring and contracts it upon the tumor; then alternate traction will cause the wire to cut through. The proceedings can be easily watched. Steel piano wire, No. 5, is the smallest that can be used for this heavy work, and is the size best adapted to the instrument for general work. There are similar attachments for the larynx and vault of the pharynx. These split rings are of various shapes, and are placed upon the tubes at different angles. The instrument is especially useful in operating on tumors of the larynx.

NEW YORK, 21 EAST TWENTY-EIGHTH STREET.

[1] Exhibited before the Laryngeal Section of the N. Y. Academy of Medicine.

NEWS ITEMS.

The Report of the British Commission of Inquiry into M. Pasteur's Treatment of Hydrophobia.—The report of the Commission appointed last year by the President of the Local Government Board to inquire into M. Pasteur's treatment of hydrophobia was presented to Parliament last week. The Commission consisted of Sir James Paget (Chairman), Sir Joseph Lister, Sir Henry Roscoe, Dr. Richard Quain, Dr. Lauder Brunton, Professor Burdon Sanderson, Dr. George Fleming, and Mr. Victor Horsley (Secretary), and they all signed the report, an abstract of which appears in *The Lancet* of July 2d.

The report commences by stating that it was found necessary that some of the members of the committee should, together with Mr. Victor Horsley, the secretary, visit Paris so as to obtain information from M. Pasteur himself, to observe his method of treatment, and investigate a considerable number of cases of persons inoculated by him; and, further, that a careful series of experiments should be made by Mr. Horsley on the effects of such inoculation on the lower animals. Mr. Horsley's experiments are stated to confirm entirely M. Pasteur's discovery of a method by which animals may be protected from the infection of rabies. If a dog, rabbit, or other animal be bitten by a rabid dog and die of rabies, a substance can be obtained from its spinal cord which, being inoculated into a healthy dog or other animal, will produce rabies similar to that which would have followed directly from the bite of a rabid animal, or differing only in that the period of incubation between the inoculation and the appearance of the characteristic symptoms of rabies may be altered. The rabies thus transmitted by inoculation may, by similar inoculations, be transmitted through a succession of rabbits with marked increase of intensity. But the virus in the spinal cord of rabbits that have died of inoculated rabies may be gradually attenuated by drying the cords, so that after a certain number of days' drying it may be injected into healthy rabbits or other animals without any danger of producing rabies; and by using on each successive day the virus dried during a period shorter than that used on the previous day an animal may be made almost certainly secure against rabies, whether from a bite or from any method of subcutaneous inoculation; and this protection is proved by the fact that if animals so protected and others not thus protected be bitten by the same rabid animal, none of the first set will die of rabies, and, with rare exceptions, all of the second set will succumb.

It may hence be deemed certain that M. Pasteur has discovered a method of protection from rabies comparable with that which vaccination affords against infection from smallpox. It would be difficult to over-estimate the importance of the discovery, whether for its practical utility or for its application in general pathology. It shows a new method of inoculation, or, as M. Pasteur sometimes calls it, of vaccination, the like of which it may become possible to employ for protection of both men and domestic animals against others of the most intense kinds of virus. The duration of the immunity conferred by inoculation is not yet determined; but during the two years that have passed since it was first proved there have been no indications of its being limited. The preventive treatment adopted by M. Pasteur is based on the foregoing experience; but the determination of the success of the method is far from easy, owing to (1) the difficulty of determining whether the bites were really those of rabid animals; (2) the probability of hydrophobia in persons bitten by dogs that were certainly rabid depending very much on the number and character of the bites, whether they were on exposed parts or parts protected by clothing; and in all cases in the amount of bleeding; (3) in all cases the probability of infection may be affected by speedy cauterizing or excision of the wounded parts, or by various washings, or other methods of treatment; (4) the unequal danger of bites of different species of animals, and even of different dogs. In some groups of cases the percentage of deaths among persons bitten by dogs believed to have been rabid has been estimated at only 5 per cent., in others at 60 per cent.; and the mortality from the bites of rabid wolves has been variously estimated at from 35 to 90 per cent.

By the courtesy of M. Pasteur the committee were enabled to investigate personally ninety cases treated by him, these being mostly those which had been earliest treated, in which the periods since inoculation were longest, and living within reach in Paris, Lyons, and St. Etienne. Among the ninety cases there were twenty-four in which the patients were bitten on naked parts by undoubtedly rabid dogs, and the wounds were not cauterized or treated in any way likely to have prevented the action of the virus; there were thirty-one in which there was no clear evidence that the dog was rabid; others in which the bite had been inflicted through clothes. It is estimated, from experience of the results of bites in other cases, that had they not been inoculated, not less than eight among these ninety persons would have died. Not one of them has shown since the inoculation any signs of hydrophobia.

Since, in order to quiet fears, M. Pasteur has been obliged to inoculate many in whom there was no satisfactory evidence that the bite was that of a rabid animal, it might be unjust to estimate the total value of his treatment in the whole of his cases as being more than the rate of mortality observed in them compared with the lowest rate observed in any large number of cases not inoculated. This lowest rate may be taken at 5 per cent.; and, as between October, 1885, and the end of December, 1886, M. Pasteur inoculated 2682 persons (including 127 from this country), the mortality should have been 130. But at the end of 1886 the number of deaths was 31, including 7 bitten by wolves, in whom the symptoms of hydrophobia appeared while they were under treatment; in fact, the actual percentage mortality was between 1 and 1.2, showing, on the lowest estimate, the saving of not less than 100 lives. Of 233 persons bitten by animals in which rabies was proved, only 4 died. Without inoculation at least 40 would have died. Among 186 bitten on the head or face by animals in which rabies was proved, only 9 died, instead of at least 40. Of 48 bitten by rabid wolves, only 9 died, instead of nearly 30. Between the end of last December and the end of March M. Pasteur inoculated 509 persons bitten by animals proved to have been rabid; only 2 have died, one of these, bitten by a wolf a month before inoculation, dying after only three days'

treatment. The committee think it therefore certain that the inoculations practised by M. Pasteur have prevented the occurrence of hydrophobia in a large proportion of those who, if they had not been so inoculated, would have died of that disease. And his discovery shows that it may become possible to arrest by inoculation even after infection, other diseases besides hydrophobia. His researches have also added very largely to the knowledge of the pathology of hydrophobia, and supplied a sure means of determining whether an animal which has died under suspicion of rabies was really affected with that disease or not.

The question whether the method itself entails risk to health or life is then discussed, the distinction between the ordinary method and the "intensive" method being pointed out. By the first method there is no evidence or probability of any danger to health at all; but after the intensive method, which is practised in only the most urgent cases, deaths have occurred which might possibly be attributed to the inoculations rather than to the original infection. Yet in the worst cases the intensive method is relatively more efficacious than the ordinary method, nor is the rate of mortality greater after the former method than after the latter. Certain cases, one of which is detailed, have, however, excited suspicion from the mode of death. The case related is that of a man bitten by a rabid cat at the Brown Institution, treated by M. Pasteur the next day by the intensive method, continued during twenty-four days, and dying about a month later with symptoms of acute ascending paralysis. The man was very intemperate, and had been exposed to chill while crossing the Channel on his return home. Mr. Horsley proved that his death was due to the virus of rabies, by using a portion of his spinal cord for the inoculation of rabbits and dogs, which died with characteristic signs of paralytic rabies such as usually occurs in rabbits. Yet it is by no means certain that the fatal issue in this and in other cases treated by the intensive method was not due to the original infection. M. Pasteur has, however, greatly modified this plan of treatment, which he employs in none but the most urgent cases.

The final paragraphs of the report, which embody practical suggestions, may be given *in extenso*:

The consideration of the whole subject has naturally raised the question whether rabies and hydrophobia can be prevented in this country. If the protection by inoculation should prove permanent, the disease might be suppressed by thus inoculating all dogs; but it is not probable that such inoculation would be voluntarily adopted by all owners of dogs, or could be enforced on them. Police regulations would suffice if they could be rigidly enforced. But to make them effective it would be necessary (1) that they should order the destruction, under certain conditions, of all dogs having no owners and wandering in either town or country; (2) that the keeping of useless dogs should be discouraged by taxation or other means; (3) that the bringing of dogs from countries in which rabies is prevalent should be forbidden or subject to quarantine; (4) that in districts or countries in which rabies is prevalent the use of muzzles should be compulsory, and dogs out of doors, if not muzzled or led, should be taken by the police as "suspected." An exception might be made for sheep dogs and others while actually engaged in the purposes for which they are kept. There are examples sufficient to prove that by these or similar regulations rabies, and consequently hydrophobia, would be in this country "stamped out," or reduced to an amount very far less than has hitherto been known. If it be not thus reduced, it may be deemed certain that a large number of persons will, every year, require treatment by the method of M. Pasteur. The average annual number of deaths from hydrophobia during the ten years ending 1885 was, in all England, 43; in London alone, 8.5. If as in the estimates used for judging the utility of that method of treatment, these numbers are taken as representing only 5 per cent. of persons bitten, the preventive treatment will be required for 860 persons in all England; for 170 in London alone. For it will not be possible to say which among the whole number bitten are not in danger of hydrophobia, and the methods of prevention by cautery, excision, or other treatment, cannot be depended upon.

THE AMERICAN OTOLOGICAL SOCIETY will hold its twentieth annual meeting at the Pequod House, New London, on the 19th of July. The following papers are announced on the preliminary programme:

1. The Examination of the Power of Hearing, and how to Record its Results. Committee report by Dr. H. Knapp (Chairman), Drs. F. S. Prout and D. B. St. John Roosa.

2. The Successful Removal of an Exostosis from the Auditory Meatus by a New Method. By Dr. C. H. Burnett.

3. Cases Illustrating the Differential Diagnosis between Affections of the Middle Ear and those of the Labyrinth. By Dr. D. B. St. John Roosa.

4. Remarks upon a Case of Cerebral Abscess. By Dr. D. B. St. John Roosa.

5. Suppuration of the Tympanum, occurring in a Patient with Bright's Disease, with Presentation of the Pathological Specimen. By Dr. D. B. St. John Roosa.

6. A Case of Syphilitic Disease of the Labyrinth, exhibiting Remarkable Variations in the Degree of Deafness. By Dr. Samuel Theobald.

7. Desquamative Inflammation of the Middle Ear, with remarks. By Dr. O. D. Pomeroy.

8. Photographic Illustration of the Anatomy of the Human Ear. By Drs. H. L. Morse, and B. Alexander Randall, of Philadelphia.

9. An Efficient Powderblower, with remarks upon the Use of Powders in the Treatment of Diseases of the Ear. By Dr. E. E. Holt.

10. A Case of Rapid and Almost Total Loss of Hearing in a Child, seven years of age; Inherited Syphilis apparently the Cause; Marked Improvement following the Use of the Iodide of Potassium. By Dr. A. H. Buck.

11. An Examination of Fifteen Deaf Mutes, by means of F. A. Maloney's Otophone. By Dr. C. H. Burnett.

12. Excision of the Ossicles of the Drum of the Ear. By Dr. Samuel Sexton.

FOOD ADULTERATION IN NEW YORK.—The New York *World* has undertaken to determine whether the charges as to the adulteration of foods, liquors, and medicines at the present time are with or without foundation in fact.

Edward G. Love, Ph. D., was retained to conduct the

examinations. Purchases were made by men from the *World's* staff and a record kept of the weight and place of purchase. The first report refers to sugar, tea, and coffee, and three hundred different stores in New York city were patronized.

A review of the 300 reports discloses that of the samples of tea, 88 were not adulterated and 12 were adulterated mostly with "lie tea" and foreign leaves; that of the samples of ground coffee 72 were unadulterated and 28 were adulterated mostly with chicory and peas; that of the sugar samples 98 were pure and only 2 adulterated with starch glucose. In all, there were, of the 300 samples, 258 good and 42 more or less bad. As to the weights of the samples those of 270 were correct and 30 were light.—*Sanitary News*, June 11, 1887.

DR. S. D. POWELL.—Dr. Seneca D. Powell has been elected Professor of Clinical Surgery in the New York Post-graduate Medical School and Hospital.

APPOINTMENTS AT UNIVERSITY COLLEGE, LONDON.—Dr. Sydney Ringer has been elected to fill the Professorship of Clinical Medicine made vacant by the death of Wilson Fox. Mr. Victor Horsley succeeds Dr. Bastian as Professor of Pathology.

THE INTERNATIONAL CONGRESS ON ALCOHOLISM.—At Antwerp, which, in 1885, was the scene of the last Congress on this great question of public health, it was arranged that the next should be held this year at Zurich, on September 9th and 10th. The permanent committee are organizing for the occasion an exposition of everything bearing on alcoholism. For example: tables and diagrams of different countries, indicating the consumption of alcohol per head of the population; the proportion of persons annually undergoing imprisonment per one hundred thousand of the inhabitants; the annual proportion of suicides and of lunatics; the annual outlay on alcoholic drinks compared with that incurred for articles of prime necessity; plans of asylums for inebriates; specimens of non-intoxicating beverages; and comparative regulations of the various temperance societies, with statistics of their working.—*Lancet*, June 11, 1887.

POISONING BY ORNAMENTAL BISCUITS IN MELBOURNE.—Several children have suffered from all the symptoms of irritant poisoning lately, after eating ornamental biscuits. These were found, on analysis, to contain arsenic and copper in the coloring matter, and the manufacturers, at the instance of the Central Board of Health, were fined £20 and costs.—*Lancet*, June 11, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JULY 5 TO JULY 11, 1887.

HEGER, A., *Lieutenant-Colonel and Surgeon.*—Ordered to Fort Columbus, New York Harbor, N. Y.—*S. O. 156, A. G. O.*, July 8, 1887.

JANEWAY, J. H., *Major and Surgeon.*—Ordered to Benicia Barracks, as Post Surgeon; also, as Attending Surgeon at Benicia Arsenal, Cal.—*S. O. 156, A. G. O.*, July 8, 1887.

BIRMINGHAM, H. P., *Captain and Assistant Surgeon.*—Ordered to Fort Myer, Va.—*S. O. 156, A. G. O.*, July 8, 1887.

WOODRUFF, C. E., *First Lieutenant and Assistant Surgeon.*—Ordered to Fort Mackinaw, Mich.—*S. O. 156, A. G. O.*, July 8, 1887.

WINNE, C. K., *Captain and Assistant Surgeon.*—Ordered to Fort Wadsworth, New York Harbor, N. Y.—*S. O. 156, A. G. O.*, July 8, 1887.

HOWARD, VALERY, *Captain and Assistant Surgeon.*—Ordered to Fort Abraham Lincoln, Dakota Territory.—*S. O. 156, A. G. O.*, July 8, 1887.

MAUS, L. M., *Captain and Assistant Surgeon.*—Ordered to Fort Schuyler, New York Harbor, N. Y.—*S. O. 156, A. G. O.*, July 8, 1887.

GIRARD, J. B., *Captain and Assistant Surgeon.*—Ordered to Fort Lowell, Arizona.—*S. O. 156, A. G. O.*, July 8, 1887.

POINDEXTER, J. D., *First Lieutenant and Assistant Surgeon.*—Ordered to Camp Poplar River, Montana Territory.—*S. O. 156, A. G. O.*, July 8, 1887.

MACAULEY, C. N. B., *First Lieutenant and Assistant Surgeon.*—Ordered to Fort Gibson, Indian Territory.—*S. O. 156. A. G. O.*, July 8, 1887.

BYRNE, C. B., *Captain and Assistant Surgeon.*—Ordered to Washington Barracks, District of Columbia.—*S. O. 156, A. G. O.*, July 8, 1887.

WILCOX, T. E., *Captain and Assistant Surgeon.*—Ordered to Fort Niobrara, Nebraska.—*S. O. 156, A. G. O.*, July 8, 1887.

LIPPINCOTT, H. *Major and Surgeon.*—Ordered to Fort Union, New Mexico.—*S. O. 156. A. G. O.*, July 8, 1887.

CLEARY, P. J. A., *Major and Surgeon.*—Ordered to Fort D. A. Russell, Wyoming.—*S. O. 156, A. G. O.*, July 8, 1887.

CALDWELL, D. G., *Major and Surgeon.*—Ordered to Fort Assininiboine, Montana Territory.—*S. O. 156, A. G. O.*, July 8, 1887.

TORNEY, G. H. *Captain and Assistant Surgeon.*—Ordered to Fort Robinson, Nebraska.—*S. O. 156, A. G. O.*, July 8, 1887.

REED, WALTER, *Captain and Assistant Surgeon.*—Ordered to Mount Vernon Barracks, Alabama.—*S. O. 156, A. G. O.*, July 8, 1887.

PATYKI, J. H., *Captain and Assistant Surgeon.*—Ordered to Fort Huachuca, Arizona Territory.—*S. O. 156, A. G. O.*, July 8, 1887.

EBERT, R. G., *Captain and Assistant Surgeon.*—Ordered to Fort Custer, Montana Territory.—*S. O. 156, A. G. O.*, July 8, 1887.

PELCHER, J. E., *First Lieutenant and Assistant Surgeon.*—Ordered to Fort Monroe, Virginia.—*S. O. 156, A. G. O.*, July 8, 1887.

GARDINER, J. DE B. W., *Captain and Assistant Surgeon.*—Ordered to Fort Washakie, Wyoming Territory.—*S. O. 156, A. G. O.*, July 8, 1887.

CHAPIN, A. R., *First Lieutenant and Assistant Surgeon.*—Ordered to Newport Barracks, Kentucky.—*S. O. 156, A. G. O.*, July 8, 1887.

FORWOOD, W. H., *Major and Surgeon.*—Ordered to Fort Snelling, Minnesota.—*S. O. 156, A. G. O.*, July 8, 1887.

PERLEY, H. O., *Captain and Assistant Surgeon.*—Ordered to Fort Wayne, Michigan.—*S. O. 156, A. G. O.*, July 8, 1887.

TREMAINE, *Major and Surgeon.*—Ordered for examination by Army Retiring Board, at Governor's Island, New York Harbor, N. Y.—*S. O. 151, A. G. O.*, July 1, 1887.

SKINNER, J. O., *Captain and Assistant Surgeon.*—Granted leave of absence for four months, on surgeon's certificate of disability.—*S. O. 151, A. G. O.*, July 1, 1887.

HARRIS, H. S. T., *First Lieutenant and Assistant Surgeon.*—Will be relieved from duty at Fort Ringgold, Texas, upon the return of Assistant Surgeon W. F. Carter, and will then report to Commanding officer at Fort McIntosh, Texas, for duty.—*S. O. 73, Department of Texas*, June 27, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 9, 1887.

HUDSON, A., *Medical Inspector.*—Detached from the "Trenton," and wait orders.

SCOFIELD, W. K., *Medical Inspector.*—Ordered to relieve Medical Inspector Hudson, on the "Trenton."

THE MEDICAL NEWS.

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ORIGINAL LECTURES.

THE TREATMENT OF SPASTIC PARALYSES.

A Clinical Lecture,
Delivered at the Infirmary for Nervous Diseases, Philadelphia, May 20, 1887.

BY S. WEIR MITCHELL, M.D.,
PHYSICIAN TO THE INFIRMARY.

GENTLEMEN: There are now in the wards five cases, all of which exhibit in various degrees what I am apt to describe as the "lead-pipe leg." By this I mean that the limb resists steadily passive motion, and resists in proportion to the abruptness of the force used. As you flex or extend it the resistance felt is like that offered when you bend a bar or pipe of lead. The patient is powerless to relax the member.

These cases all present, as a rule, the symptom of excessive tendon-jerk from a blow or even a faint tap on the tendon of the quadriceps, or that of the gastrocnemius. The ankle clonus is also easily obtainable, and in extreme instances a clonus of the extensor mass of the leg.

In some of these patients the electrical muscle responses to faradic currents are exaggerated, and in most of them the muscle-jerk caused by a direct blow of a percussion hammer on the side of the hand is too ready and too extreme as compared to the muscle-jerk of health.

We also observe that the tendon-jerk, the clonus, which is only a form of that phenomenon, and the muscle-jerk may in most of these cases of spastic trouble be abruptly increased by reinforcements. These are either motor or sensory. This is only an extreme illustration of a fact easily observable as concerns any of the tendon or muscle-jerks of health. Thus, if in a spastic case we cause the patient to cough or make a grimace or violently shut a hand, or if we pinch him anywhere and we time the blow on the muscle or tendon so as to follow the distant voluntary act or the sensation at a brief interval, the jerk is largely exaggerated, and this reinforcement is greatly larger in the spastic case than in health, and is sometimes a help toward a complete diagnosis.

As a rule, all forms of reinforcement are in proportion to the amount of the knee, or in general terms tendon-jerk. If it be large, so is commonly the reinforcement. If it be lost the reinforcement, if present, is trivial. Both are tests of the muscular excitability and of the integrity of the nervous arc, and also more or less of the relative irritability of certain spinal centres. When we learn more of the tracks followed by reinforcing energy, whether motor or sensory, we shall no doubt find in this evolved symptom an important ally in diagnosis.

The resistance symptom, like others seen in the spastic group, varies in degree, and is due to the fact that in bad cases every effort to bend or extend the limb affected excites the muscle, or centres which control it, and is an extreme indication of that excitability which is seen in the exaggeration of knee-jerk and in clonus. When also the will is used to flex or extend these muscles there is the same result, the opponent muscle, which should relax, does just the reverse thing, and as it is stretched offers a positive resistance, which accounts in a measure for the peculiar gait of those cases in which the spastic state involves both groups of muscles in the legs. When only the flexors or extensors are affected, a rare condition, not well understood as yet, the walk is very peculiar; but as I have no mind to-day to do more than so to introduce the matter as to be able to speak of treatment, I shall not pause too long over the varieties of the disorder.

The spastic state may be due to cerebral disease and secondary degenerative spinal changes, to the extreme degree of this seen in some of the spastic disorders of childhood which are so enduring, to local disorders of the cord, to pressure by growths, or to sclerosis of the lateral columns, and, lastly, we can produce artificially a condition in which clonus is possible, knee-jerks and ankle- and muscle-jerks are excessive, and which will even enable us to evolve the "front tap" of Gowers, never present, according to that able author, except in disease. The condition of excitability described was brought about by Dr. Morris Lewis and myself by combining all the means capable of causing reinforcements, as galvanism to the head, pain, and violent muscular motion. With this combination we get in a degree all the extreme phenomena of spastic cases except the muscular resistances, but these we could hardly hope to find, as the condition of excitation is of necessity brief, and leaves but a moment in which to examine results. Near to the close of an epileptic fit we sometimes have a like state of increased tendon-jerks, capacity to evolve clonus, and even some resistance to flexion, but in a few moments a reverse state may be seen of lowered or abolished reactions. Probably the excitability may be due to the reinforcements caused by the convulsing discharges.

I have no intention here of going deeply into the question of the immediate causes of the spastic state, whether pathological or temporarily induced. It will be answered when we know more of the tracks followed by reinforcing energy, and when we have studied the time required for its effects and are absolutely clear as to whether tendon-jerks and muscle-jerks are due to mere induced muscle states or represent unusually rapid reflexes.

I have brought the matter before you in order to call attention anew to methods of treatment which apply not only to almost all chronic and non-progressive forms of spastic paralysis, but also to the forms seen in childhood or adult life as a consequence of hemiplegia, and associated or not with post-paralytic chorea.

Without now concerning ourselves with remote causes,

and they vary with all of the cases in our wards, let it suffice that the muscles in these people react too easily. Behind the spasm, so to speak, there is very often, but not always, a degree of true want of power, so that if, by bromides and very prolonged massage, you temporarily wear out the spasticity, you find that the patient can no longer stand; you have taken away the spasms which splinted the limb and made the upright state possible. But in many non-active cases, which are chronic and unchanging, there is still volitional control enough to enable the patient to profit by a lessening of the spastic state. You can do little good in progressive cases, but much good in others; and I am glad to give you the lesson with examples of success, because as a rule in the chronic spastic palsies of childhood, either there is reckless tendon cutting and braces and nothing else, or no treatment at all beyond circumcision, which in my large experience has been very rarely of value, and is applied remorselessly at some time, by some one, to nearly all the cases in childhood which I chance to see. True functional spastic states from genital irritation must be most rare.

I have here to-day no illustration of those horrible spastic palsies due to rapidly progressive irritative diseases of the cord. They present for you in an extreme degree all the symptoms I have mentioned, and some which I have not dwelt upon. Massage used gently at first and skilfully increased, is a comforting agent in these advancing cases of painful spastic palsy, but it must be most skilfully used. It is a comfort, and no more. When employed in conjunction with large doses of bromides, it may lessen spasm temporarily.

There is, however, another method of manipulation which has real and permanent utility in an uncertain proportion of spastic cases, and seems to act, in part at least, by rendering the muscles less susceptible to the agencies which over-excite them.

If I place this man, who has excessive knee-jerk, on his face, with the thigh rather overextended, and then flexing the leg on the thigh, strike the patellar tendon, I get a violent response. As I bend the leg the reply lessens, until, at a certain point, it ceases altogether. If, keeping the knee in the same position, I now relax the tension on the quadriceps, by lessening the angle of the thigh to the trunk, the knee-jerk returns; it was, therefore, lost, not because we had mechanically interfered with a favoring position of the tendon, but because when we overstretch a muscle it loses power to react when its fibres are suddenly excited by the abrupt little pull you make on them by a blow on the tendon.

This fact is true of the normal knee-jerk, and of the excessive reaction of a spastic case. A certain amount of tension seems to render a muscle less able to respond to excitation. It is true of a blow, and it is true of electricity, as Dr. Lewis and I have shown. It occurred to me that extreme and frequent extension might lessen more permanently the exaggerated excitability of muscles, and from time to time I have tested this hypothesis. I conclude to-day that muscular extension is of use in all cases of hyper-excitable muscles, but that it does best in the typical spastic palsies of childhood, and in such other forms as are pathologically non-progressive. That the process is in these cases useful is for me now past doubt, and when I say that it is useful, I mean that it distinctly adds to the comfortable locomotility of my patients.

I am by no means sure that the reasoning which led up to the use of this simple method was correct, but sometimes in medicine one walks with measured steps up to a truth, and sometimes one stumbles across it.

The plan I shall here describe is very simple, and may have been described before, and methodically used. Let me add that it helps but does not cure.

Every muscle concerned is to be put twice a day, and over and over in a condition of extreme extension by a series of manipulations easily taught to a strong nurse. An example will save a too elaborate description. The girl I now show you is accustomed to the process, and I shall use her as an illustration both of the means and its resultant value. Her clothes are somewhat in the way. The patient should be so far undressed as not to interfere with extremity of movement.

Placing her on her back, the nurse takes the foot in her lap and moves each toe in flexion and in extension, steadily and to the limit of endurance, and then slowly lets it go back to rest. Next the ankle is flexed to the limit with the knee in extension, then the knee is flexed and the foot carried firmly into prolonged extension; lateral motions follow. The leg is then fixed strongly but with deliberate slowness, the patient being on her face, and the thigh in extension, and while still in the same posture the nurse puts a hand on the buttocks and pulls the thigh back, or sets a knee on the buttock and gently pulls the leg up from the bed, so as to stretch the quadriceps. The anterior thigh muscles may also be stretched by putting the patient on her back half off of the bed with a pillow under the pelvis, and by pushing the leg downward. The lateral motions to stretch the adductors are managed best by two nurses, but it is easy to effect them by sitting on the bed or lounge between the limbs, and so with both hands forcing the leg into abduction, while the other leg is stayed by the body of the nurse. The stretching of the posterior muscles of the thigh is also easily done by lifting the whole limb while the leg is in extension on the thigh. All motions should be firm and slow, so as not to arouse resistance, and as time goes on, should be repeated more often, as the distress lessens. At first the pain is annoying, but as I never propose so to stretch as to elongate the nerves extremely, it need not be such as to forbid progress. Nearly all old cases have a certain brawn-like hardness of muscle, and no doubt one does in all cases stretch and disturb somewhat the small nerves imbedded in these firm and unrelaxing tissues; but this is very different from the violent and painful nerve stretching above alluded to.

Whatever it is that we do by this process, if it be regular, steadily used, and done with thought-guided skill, it is assuredly helpful, and while it does not cure it brings in the end remarkable changes.

The hardness of the muscles lessens, the tissues get softer and sweat better, are less dry, the gait improves, the limbs get warmer, and, what surprises one, the general condition is often ameliorated. When you have reached a limit, and after some weeks, the favorable changes cease, it is time to see what more can be done by tendon sections which, at this stage, I am willing to use freely. After the wounds heal, indeed, pretty early, I return for a few weeks to the extensions, and train the

patient to imitate them, which, with the least ingenuity, is easy enough.

In many of the spastic palsies of childhood which follow a series of convulsions, or are due to some intracranial trouble of uterine life, you will find that some muscles are spastic, some less so, some contracted and inert. According to their condition and electrical and other reactions, are they to be dealt with. Some need extension, some want to be electrically stimulated, and need also massage. Each muscle and group must be considered, and the wants provided for. It is troublesome. It needs patience. It exacts intelligence—but it wins in the end. It is easy to cut off a prepuce or to put on a brace. But a brace is a prison, and I think a good deal before I condemn a muscle to its confinement.

I show you here a valuable group of cases. One, a man with an obscure spinal malady, probably sclerosis, has been at a stand-still for years. I failed to help him once, now I am trying again with new lights, and he insists that his gain is great. This case is hard to handle, because he is heavy, and the muscles strong. I cannot largely aid him. The second case was here years ago. I dismissed it in disgust, having simply done no good. Readmitted at my desire, she is here to illustrate a half year's result.

The patient, a girl of seventeen years, walks now before you. Observe the body rocking on the too rigidly held pelvis, the legs bending with effort, the jerk of the body as the foot falls, and the spasm of the gastrocnemius which refuses to let down the heel, so that she swings along, rocking on the ball of the foot. This symptom, which is so characteristic, is worth a moment's study.

If you put this girl on her back the limbs will still be spastic, but not as they are when she puts weight on the sole, the pressure at once increases the tendency to spasm. It is a reinforcing sensation, and radiates to the cord impressions which, as they reach the ganglia concerned, add to their abnormal excitability. It is no wild conjecture that this represents in excess a normal phenomena, and that in health pressure on the sole sends reinforcing energy into the ganglia, by aid of which we stand and walk. Years ago I failed with this case, which originated in prenatal troubles of which we know but little. A few weeks here of late have lifted her in health, abated her nervousness, increased her weight, and put her in a state to do manual work, despite the tremor you observe, and the persistence, in lessened degrees, of all her previous conditions. There is gain, not cure. Of late I have given her cod-liver oil, and now shall cut the tendon of the left gastrocnemius. The other heel comes well down at present, as it did not do a month ago.

I show you here a nice lad, æt. fourteen. Born at seven months, he held up his head at the end of a year. At his fourth year he could walk with difficulty —seizing at objects and often falling. This is a typical case of spastic disease from some obscure intrauterine disorder. When he came to me he was as now—clever and intelligent—but he fell about, could walk but a little without great fatigue. His thighs on violent adduction chafed one another, and he rose on his toes and pitched about in his walk. With his eyes shut he fell at once, and at no time was his equilibrium preserved save at the cost of great effort. The thigh adductors were stiff and hard, and the gastrocnemii were also abnormally firm. He had been braced by many doctors and then sent off to improve as he might. Of course, he has been circumcised. It did not do the least good. I have rarely seen a less promising case.

January 1, we began extensions and in the hands of a practised and thoughtful masseur, Mr. Penington, he showed good results in a fortnight. As he gained he was trained to stand with shut eyes, which did good. After two and a half months of persistent extensions he ceased to gain rapidly, and now I was able to know what tendons to cut. Dr. Wm. Keen divided for me the semitendinosus and semimembranosus on both sides, also the adductors of both thighs just below their origins.

In a few days later we resumed the extensions, and once more there was a new increment of gain. He still walks with his legs slightly flexed, and still stoops over his pelvis, but he can straighten both the legs and the trunk, and being interested and a lad of character will, by and by, and continuously gain in power and position. His temper has improved, his tendency to emotional expression passed away, and he has now ability to walk for two or three miles without aid of any kind. I never see him without a sense of pleasure at the gains thus acquired for an interesting lad.

I neglected to say that he had some distinct quantitative loss of faradic electric response in the lumbar muscles, and the flexors of the feet. These were treated by electricity and with positive improvements, which were aided by massage used only for the muscular groups in question.

I have said elsewhere that cases of spastic trouble in women are apt to wear the mask of hysteria, and to be excessively puzzling. I have seen a curious illustration of this but lately, and am glad here to relate this instructive case.

In the early winter, Dr. Sutton, of Pittsburg, Pa., confided to my care Miss C. L., of K. city, æt. twenty-nine. At twelve she had typhoid fever, and pneumonia thirteen years ago. From 1879 to August, 1883, she had asthma frequently, but it left her abruptly, and she had unusual good health until February, 1884. She was then attacked in the night, without known cause, by severe pain in the sacral and lumbar regions. This came and went up to August, 1886. It was at times absent—at times severe—a sense of weight, quite often unendurable. The pain had no relation to menstruation, which was regular and free from discomfort. During the year which followed she had less and less pain, but more and more difficulty of movement in rising and walking, and at times numbness in the hands and feet—which was, however, a transient symptom until early in December, 1886, when suddenly she became aware of abrupt loss of sensation in the right leg to the knee. About this time she began to feel a decided and constant sense of constriction around the abdomen, and to exhibit a more and more awkward gait.

February 8, 1887, I examined the case with these results:

The thoracic and abdominal viscera healthy. The secretions normal. Defecation natural. Slight difficulty in micturition. Menstruation regular and free from grave troubles.

Her mind was clear, her memory good, and her emotions under control, not a trace of hysterical tendencies, in fact, a well-balanced person. She was free or nearly free from the girdle symptom, but at times it was distinctly and disagreeably felt. Otherwise she had no pain and for months no sacral pain. To my surprise and hers, I discovered that she had entire analgesia with the exception of a region such as would be left uncovered by a ball dress rather low in the neck. Thus the normally sensitive territory dipped between the breasts and left them analgesic, crossed the shoulders and descended the spine in a narrow strip to the sixth dorsal vertebra. The boundaries were sharp and did not change, so that the neck, shoulders, and head were perfectly possessed of all forms of feeling. Below these, as I have said, there was no sense of pain. Pins could be buried in the flesh. Violent faradization of nipple or nail regions caused no annoyance. Cold was felt as heat in the legs, heat was not felt or dimly felt as heat, except in the soles, where high temperatures were known to be heat. Touch was everywhere indistinct, the toes were not distinguished correctly, and touch was usually referred to a point nearer the centre.

No pin-prick bled within the analgesic spaces even if the pin were of very large size. Vision was normal, the color field healthy. The plantar reflex persisted. The faradic and galvanic reactions seemed to be distinctly below the normal standard, and the responses came tardily, but, of course, comparisons were difficult as both sides were affected.

Her gait was curious and was like an extreme exaggeration of the motion of a woman with unusual breadth of pelvis. There was also the spastic element, the toes struck the floor as she moved forward, and at each step she was lifted abruptly by the spastic action provoked in the gastrocnemius by the pressure of the sole on the ground. She could not rise unaided nor walk without help. With shut eyes she fell at once. The knee-jerks and muscle-jerks were extreme and easily and largely reinforced. Very marked ankle clonus existed on both sides with exaggerated muscle-jerks. The left arm and hand were weaker by one-half than the right, but the reverse obtained as to the power of the lower limbs.

The combination of a mild form of spastic paralysis with analgesia, the girdle symptom, the absence of sphincter troubles all contributed to make this case somewhat bewildering. My friend Prof. Horatio Wood saw it with me twice. It seemed to us probable that there had been some distinct organic disease in the lumbar region of the cord; as to its nature we could hardly do more than guess. It was our belief that to this had been superadded symptoms which we should usually describe with little hesitation as hysterical despite the utter absence of a hysterical history or temperament, and of emotional causative disturbances.

Of this lady I was happy enough to make a good cure. Under the use of the wire brush and secondary induction currents with powdered skin, the analgesia disappeared in a few weeks. It faded in irregular spaces and at last none was left. The spastic muscles were treated by extensions, and as the spasms lessened more and more general massage was used. Absolute rest was preserved for two months and then followed a graduated course of muscle training and of exercise with shut eyes. Long after she was up I insisted on crutches to enable her to save labor for the legs and to lessen weight on the soles. She now walks fairly well, has no clonus, no pain, and is free from analgesia and gaining in vigor every day.

ORIGINAL ARTICLES.

EVERGREEN FORESTS AS A THERAPEUTIC AGENT IN PULMONARY PHTHISIS.[1]

By ALFRED L. LOOMIS, M.D., LL.D.,
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If one studies the literature of medical climatology, he will find very few well-established facts, or even plausible theories, which satisfactorily explain the beneficial effects of change of climate upon pathological processes. Even the climatic treatment of phthisis, upon which the most careful attention has probably been bestowed, must still be regarded as unsettled.

We are unable as yet to formulate any exact statements as to the influence of even the more potent elements of climate, such as light, heat, and moisture, while our knowledge of the more obscure and imponderable factors is still more uncertain and chaotic.

Even the nomenclature employed by medical writers is inexact and confusing; the terms cold and warm, severe and mild, moist and dry may each individually find exact expression in figures, but one very soon becomes convinced from his clinical experience that their various combinations can be described in no such definite terms, and that purely meteorological factors are, in themselves, of little value in elucidating the subject, or in leading to safe conclusions.

Neither the density of the atmosphere, the amount of moisture, the equability of the temperature, the barometric oscillations, nor the amount of sunlight, are sufficient data from which to deduce the climatic influence of any locality; for clinical observations have established the fact that places having similar climates, so far as can be determined by their topography and meteorological conditions, have very different therapeutic effects.

As previous investigations have given us full and exact knowledge of the physical elements of climate, the necessary inference from a clinical standpoint was, that there are other unknown agents which either by their presence or absence determine in a large degree the results obtained in different climates. Modern pathology has given definite form to this clinical deduction.

The revelations of the microscope in the field of bacteriology, have made clear many obscure points, and given a strictly scientific basis to much empirical practice, especially in the treatment of pulmonary phthisis.

All recent writers on climatology seem to agree that the chief factor, and the one common to all localities that furnish favorable results in pulmonary phthisis, is purity of atmosphere. Formerly this

[1] Read before the American Climatological Association.

term applied almost entirely to purity of physical composition, but more recently, and in the light of advanced pathological investigations, it has come to imply freedom from those floating particles derived from inorganic as well as organic sources, which appear to the naked eye as motes in the sunbeam.

In air which has been rendered impure by the crowding together of human beings, these germs are found in such quantities as to be sensible to both smell and taste, although a large portion are so minute as to be beyond the power of the microscope, and can be detected only by solar rays. Dr. David Young, in his book on the *Tuscan Hills*, says: "Many of these minute organisms are now well known; and, besides playing a very important part in the causation of disease, they likewise fulfil many functions, not only invaluable but necessary to life. They are the essential agents in the digestion of our food, they make our bread, and turn our grapes into wine, without them our crops would not grow, and much of our dairy produce would be valueless. This teeming world of microscopic life thus contains innumerable agents of minutest form, highly serviceable to man, and many which are equally hurtful, and even fatal to him. Could we discover the means of destroying the latter, mildew and blight would disappear, and many infectious diseases would be unknown."

That there is some intimate connection between the development of the microörganisms of disease and atmospheric impurities, every day's clinical experience seems conclusively to establish. Dr. Angus Smith, in his work on *Air and Rain*, states that we have in the air organized living things which are capable of planting colonies wherever they can find food. These spores may be divided into many classes, the useful and the deleterious, those which promote health, and those which bring disease. The idea of any of them bringing health is not founded on anything positive, but we can scarcely imagine these numberless forms to be all useless. The idea that they bring disease is well confirmed, and ought to be the study of the medical professsion.

All varieties of putrefactive bacteria may have an atmospheric origin, and it is reasonable to suppose that the so-called specific bacilli may have a similar origin. It is to be remembered, however, that I am not now discussing whether the cause of disease be an organic substance formed in the process of decomposition, or an organic germ. But the tendency of inquiry in modern times has been to establish the belief that decomposing substances, both animal and vegetable, produce disease, and are intimately connected with infection and the production of those contagious germs whose absence renders any atmosphere pure or aseptic; such an air must act negatively, rather than positively, if its therapeutic condition be simply that of freedom from septic elements.

Considering, however, the rapidity with which all septic germs multiply, the innumerable sources of their supply, and the freedom and ease with which they are disseminated over large areas, it seems almost necessary to suppose the presence in aseptic atmospheres of some antiseptic agent. Extreme cold and high altitudes render air aseptic without the presence of any material antiseptic element, but the degree of the one and the extent of the other necessary to produce asepsis are such as to preclude their general employment in the treatment of septic diseases; moreover, clinical experience has shown that such an aseptic air has a less powerful curative effect upon ulcerative and suppurative processes than one in which the aseptic condition is due to the persistent presence of some antiseptic agent of sufficient power to destroy existing septic germs.

The air of high altitudes is aseptic; that of the sea is antiseptic by reason of the bromine and iodine which it contains. Since then the clinical fact is well established that phthisical processes go on far more rapidly in an impure or germ-laden atmosphere, the question is constantly coming to us, Where can we find an atmosphere that is aseptic because it is antiseptic, into which we can send our patients who are suffering from tubercular disease?

Having long since been convinced by my observations that evergreen forests have a powerful purifying effect upon the surrounding atmosphere, and that it is rendered antiseptic by the chemical combinations which are constantly going on in them, I invite attention to some conditions existing in such forests, which may explain their therapeutic power.

The belief that the atmosphere of evergreen forests has a curative effect upon persons suffering from pulmonary phthisis is a very old one. Dr. Walsh, in his works on *Diseases of the Chest*, states that the old Romans sent patients with ulcerated lungs to Libra, where, by breathing the balsamic effluvia of the pines, with which the country abounded, they were said to have lived many years freed from their complaints.

The atmosphere of pine forests has always been regarded as most favorable to consumptives by the non-professional public, and there is usually some good ground for a widespread and long-standing non-professional belief in the therapeutic efficacy of any locality. Various attempts have been made to explain the beneficial effect of these forests, some have attributed it to the sedative influence of the terebinthinate vapor constantly floating in the air of such localities, which, by its action on mucous surfaces, arrests diseased processes; others have attributed it to the deoxygenation of the air by the terebinthinal vapors; others to the action of resinous aromata; and still others, to some change in the electrical condition of the atmosphere, the result of the friction of the air against the sharp needles of the evergreen trees.

Such ambiguous terms as "balsamic influence," "health-giving emanations," and "aromatized atmosphere," must be regarded as empty phrases, and meaningless as scientific explanations. The clinical evidence, however, of the beneficial effects of pine forests on phthisical subjects is unquestionable, and it has been accepted by most careful clinical observers that they are an important adjunct in the treatment of phthisis.

The changes attributable to the persistent inhalation of air impregnated with the emanations of such forests are such as to indicate that the atmosphere is not only aseptic, but antiseptic, made antiseptic by

some element which is not alone fatal to germ life, but at the same time is stimulant and tonic to normal physiological processes within the lung. Such an antiseptic the chemical laboratory has thus far failed to supply; but as we weigh carefully the facts presented to us in the study of this subject, we are led to the conclusion that this antiseptic element of evergreen forests, an element which is not found elsewhere, is the product of the atmospheric oxidization of turpentine.

It is well known that the turpentines alone have been regarded as of special service in the treatment of all forms of catarrh, especially catarrh of the respiratory surfaces. Atomized solutions and vapors of turpentine have been employed by inhalation in all forms of disease of the respiratory organs, and its internal use has long been regarded as a most valuable remedial agent in the treatment of infectious diseases. Its use in all these different ways has been, to a certain extent, empirical. Dr. Ringer, in his *Handbook of Therapeutics*, states, in addition to its other effects, that turpentine acts antiseptically, passes readily into the blood, and may be detected in the breath and perspiration, and in an altered state appears in the urine, giving it an odor of violets or mignonette.

Recently terpine, an active principle of turpentine, has been employed in antiseptic surgery, and has proven a most powerful deodorizer and antiseptic, both within and without the body. From these and many other similar facts which might be quoted, it would seem evident that the local and constitutional effects of turpentine are those of a powerful germicide as well as stimulant. Its presence in the atmosphere of pine forests cannot be questioned. Again, ozone is said to be present in excess in the air of evergreen forests, and the beneficial effects of such an air have been ascribed to this substance alone. Soret states that when ozone is brought into contact with turpentine, the whole molecule of ozone is absorbed and no oxygen remains, so that it seems evident that there is a close relation between an excess of ozone in the atmosphere and turpentine exhalation.

Recently the disinfectant property of peroxide of hydrogen has been attracting attention, and it has been shown that it is either fatal to certain forms of germ life or that it renders them inoperative, so that putrefaction processes are arrested or prevented. The oxidizing and antiseptic power of the peroxide of hydrogen have been proven by numerous experiments, among which may be mentioned those of P. Regnard (*Gazette Médical*, 1880).

The researches of Saböni, made near Moscow, published in the *Bericht Deutsch. Chem. Gesel.*, vol. viii., and abstracted in Petterkofer and Ziemssen's *Handbuch*, have proved beyond question that peroxide of hydrogren is almost certainly present in varying amounts in the air and rain, and less frequently in snow and hail, and that the amount varies with the season, with the wind, the amount of moisture and in different kinds of forests, the larger amount being found among pines. It has also been demonstrated that all kinds of aromatic plants produce it, and that many natural processes give rise to it which have been regarded as exclusive sources of ozone. As its tests are similar to those for ozone, it has doubtless been mistaken for it, as experiment shows that if turpentine is heated in contact with a stream of air, peroxide of hydrogen is produced.

Mr. Kingsett states that it is probable that each molecule of the oil of turpentine gives rise, in the process of oxidation, to a molecule of the peroxide of hydrogen, and that when turpentine is exposed to the action of the atmosphere it absorbs oxygen and evolves a peculiar organic oxide, which remains dissolved in the turpentine, communicating to the surrounding atmosphere properties similar to those of the peroxide of hydrogen; also that by natural atmospheric oxidation of the terebinthinates, there is produced in extensive pine forests an almost illimitable amount of peroxide of hydrogen, which renders the atmosphere of such forests antiseptic.

The supposition that peroxide of hydrogen exists in excess in the air of any locality is thus based upon the presence in the air of such localities of the vapor of the oil of turpentine or of other allied substances. It has been shown by Schönbein and others that peroxide of hydrogen may be produced in large quantities by the combined action of air, light, and moisture upon ether, alcohol, oil of turpentine, and other essential oils, and it has been further shown that ozonized turpentine itself contains, not ozone, but peroxide of hydrogen. It seems evident, therefore, that an atmosphere containing the vapor of turpentine or allied substances would be richer in peroxide of hydrogen than that of other situations.

Since putrefactive processes within the pulmonary tissue, no less than in any other situation, are due to, or accompanied by, the presence of various forms of bacteria, the continual bathing of the ulcerated surfaces with such a powerful antiseptic as peroxide of hydrogen, cannot have other than a decided effect in arresting the formation of the products of decomposition. Dr. Clifton Allbutt says (*Lancet*, June, 1878): "For many years I have held that the majority of phthisical patients die of septicæmia, and that the arrest of this daily repoisoning is a primary object of treatment. To wash, cleanse, and dress ulcers of the lungs by surgical methods is impossible; if, however, there be an aseptic or antiseptic climate, we may hope to counteract this secondary blood poisoning, by sending our patients to live in it. If then an antiseptic atmosphere, although not fatal to the tubercle bacilli, will destroy the products of germ life of septicæmia and pyæmia, it will accomplish much in the arrest of phthisical processes.

The more recent developments in the (Bergeon) treatment of phthisis by gaseous injections, if they shall be found beneficial, are apparently due to the arrest of septic poisoning, and not to destruction of the tubercle bacilli. It is my belief that the atmosphere of evergreen forests acts in a similar manner, and the facts which I have brought before you from many sources, seem to prove that the antiseptic agent which so successfully arrests putrefactive processes and septic poisoning, is the peroxide of hydrogen, formed by the atmospheric oxidation of turpentine vapors.

The crucial test of medicine is not in the cure, but in the prevention of disease, and I fear that the terrible death-rate from pulmonary phthisis, which has so long defied the advances of medicine, will never be greatly reduced, so long as we confine ourselves to its cure, or attempt to destroy specific bacilli lodged in some endothelial cell or lymphatic capillary. These are the impregnable citadels of germ life. If we hope to destroy them or render them inoperative in phthisical processes, it must be done through the respired air.

It is not possible for every one to take his weak lungs to an aseptic air, but it is possible to render the air of most localities antiseptic; I therefore would impress not only the profession but the public, with the importance of preserving our evergreen forests, and of cultivating about our homes, so far as possible, evergreen trees.

Dr. Dobell states that wherever the pine, with its constant exhalation of turpentine vapor, and its never-failing foliage, can be distributed in a proper proportion to the population among the houses of men, the atmosphere can be kept not only aseptic but antiseptic by nature's own processes, independent of other influences than a certain amount of sunshine and moisture—elements which, like the pine itself, can be found wherever human beings can form a home.

EPISTAXIS.[1]

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I MAKE no apology for writing on a subject as old as man, for I have learned by experience that the busy physician is much less interested in what is unique than in that which is liable to occur at any time among his own patients. However, I will have but little to say of the forms of this affection with which all are familiar, but will report cases sufficiently rare to be of interest, yet withal so grave as to merit the most careful consideration.

Epistaxis has been treated of by medical writers since the earliest ages, but something of interest may still be said of it; for within our memory great advancement has been made in the means of accurate diagnosis, and corresponding improvements have come in vogue in the methods of treatment. At this time we need hardly consider the simple bleeding from the nose which occurs in nearly every child, with or without provocation, and which ceases spontaneously, like ordinary bleeding from the lungs, and is consequently readily cured by any of the mystic rites so well known by the public.

Epistaxis is occasionally met with, that, either on account of its frequent recurrence, or the large amount of blood lost, becomes a source of great inconvenience, or of actual danger to the patient. In young people the most common cause of epistaxis is picking scales of dried mucus from the nares. In old people degenerative change in the bloodvessels is a frequent cause, and during middle life excitement, direct injuries or strains, or vigorous blowing of the nose, acting upon an ulcerated or eroded mucous membrane, are the most frequent causes. Among the common, but less frequent causes, are changes in the constitution of the blood itself, obstruction to the circulation through the kidneys, liver, lungs, or other organs; and malignant or fibrous tumors of the nares or naso-pharynx. Inhalations of irritating dusts or vapors, and many other trivial accidents, are among the less important factors in causing the affection. In children or young adults the bleeding is often a safeguard which prevents the evil effects of plethora, and in women the hemorrhage may be but vicarious menstruation.

The hemorrhage which occurs in scurvy and low forms of fever is usually due to changes in the constitution of the blood, as is also that resulting from the hemorrhagic diathesis. Sometimes there exist not only changes in the blood itself, but also in the mucous membrane; as, for example, in diphtheria. Several other infrequent causes might be named, but these are sufficient.

In plethoric persons, and often in those suffering from the low forms of fever, epistaxis is preceded by a feeling of fulness of the head, flushing of the face, giddiness, tinnitus, and itching of the nose, which symptoms are relieved by the bleeding. In the majority of cases the blood flows from one nostril drop by drop, the amount lost with one attack seldom being more than half an ounce or an ounce, and then the bleeding stops spontaneously. But in serious cases the blood may flow in a stream, and in cases dependent upon blood changes it often comes from both nostrils. In these cases the amount of blood lost will vary from one to many ounces. Some patients have been known to lose several pints in two or three days.

As a result of frequent or severe hemorrhages the patients become weak and anæmic, and suffer from neuralgia, giddiness, and other symptoms of cerebral anæmia. In the more severe cases dangerous, or even fatal syncope, may occur; but when we consider the amount of blood that is frequently lost by these patients it is a matter of surprise that a fatal termination is not more frequent. However, before the introduction of the method of plugging the posterior nares for checking epistaxis deaths from this cause were not very uncommon. In old people bleeding of the nose from slight causes is a grave symptom, indicating degenerative changes in the bloodvessels, which, sooner or later, are liable to terminate in apoplexy.

In all annoying or dangerous cases a critical rhinoscopic examination should be made of the nares and naso-pharynx, in order to discover any local cause for the hemorrhage, such as erosions, ulcers, or morbid growths. Nearly always the physician will be rewarded for his pains by finding the source of the bleeding. The appropriate treatment for epistaxis is of two kinds, viz., that designed to check the hemorrhage at once, and that to prevent its recurrence. Usually, when epistaxis occurs in the plethoric, when it is a vicarious discharge, or when it is due to venous obstruction, as not infrequently happens in hepatic, pulmonary, or cardiac disease,

[1] Read before the Illinois State Medical Society, May 19, 1887.

the physician should not try to check the bleeding unless serious symptoms supervene. But when the face becomes pale, and the extremities cold, when faintness occurs, and in all cases due to an abnormal condition of the nasal chambers, prompt measures should be adopted to prevent loss of blood. For this purpose, compressing the nostrils and holding them ten or fifteen minutes, until a firm coagulum has formed, is one of the most simple and efficacious methods. The application of cold to the brow, the nape of the neck, or even to the feet or hands, may be equally effective; or very hot water may be applied freely to the nose and face with like result. Sometimes the bleeding spot may be reached by the finger passed into the nostril and then direct pressure should be made upon it.

Having syringed out the nose with cold water, the insufflation of powdered matico leaves, alum, or tannin will often speedily give relief. Astringent sprays may be used for the same purpose, though they are less satisfactory than powders. The insufflation of a four per cent. powder of cocaine with sugar of milk will sometimes act promptly and agreeably. The iron styptics are most commonly employed, but they are far more disagreeable, and I believe much less effective than tannin.

One of the best means for checking bleeding by local remedies is—first, syringe out the nose with cold water, and then insufflate a powder containing a small amount of cocaine, which should be followed at once with powdered tannin. As the clot to be formed in this way must remain for several hours, it is a good plan to use iodoform with one of the other powders. After the powder has been applied the nostrils should be compressed, or they may be plugged with lint or cotton until bleeding ceases. This treatment will be effective in most cases, and it has the further merit of being less disagreeable to the patient than most other methods. However, it may fail, and then more thorough anterior or anterior and posterior plugging must be employed. This latter method is effective, but is exceedingly uncomfortable to the patient, and if the plug has to remain for many hours in the naso-pharynx, it is liable to set up inflammation of the Eustachian tube or middle ear. I have known of one case in which it caused dangerous inflammation of the mastoid cells. The late Professor Gross was authority for the statement that patients have frequently died from the effects of septicæmia caused by the post-nasal tampon. Other physicians have reported as resulting from it erysipelas, tetanus, gangrene, etc. If posterior plugging becomes necessary, it may most easily be effected with the aid of a soft catheter through which a double thread has been passed previous to its introduction into the nostril.

I adopt a method of plugging the nares which has proven most satisfactory, and which, I believe, may be made effective in all cases where the bleeding is not from the naso-pharynx. I take a piece of surgeon's gauze, or cheese cloth, an inch in width, and four or five feet in length. This is thoroughly saturated with tannin, which is prepared by rubbing it up with just sufficient water to make a thin, syrupy mixture. Opening the nostril with a nasal speculum, one end of the slip is folded upon itself, and over the end of a probe, by which it is carried quickly to the posterior part of the nasal cavity—a distance, in the adult, of about three and one-half inches; after this fold after fold is carried back in the same manner, though more slowly, until the cavity is completely filled, when any remaining portion of the slip is cut off. It is necessary to carry in the first fold quickly, otherwise the coagulating blood causes it to adhere to the sides of the nasal cavities and renders the subsequent filling of the back parts very difficult. If iodoform has first been blown into the nasal cavity, or has been freely mixed with the tannin, in which the gauze has been saturated, this plug may remain for two or three days without danger. When the time comes for its removal, the patient catches the end at the nostril, and pulls it out slowly and gently.

There is some liability of crowding in a part of the gauze so far that it would hang down behind the palate, but this can be easily avoided by care when the source of hemorrhage is not far back; and it may then be avoided by tying to the end of the gauze which is first introduced a number of silk threads, one every two inches, which are allowed to hang from the nostril until the naris is completely filled. These threads are then pulled firmly enough to pack the gauze thoroughly at the back part of the nasal cavity.

Whenever the tampon is used in the posterior nares a string at least two inches in length should be left hanging from it in the pharyngeal cavity to facilitate its removal. It should not be left in position more than thirty-six hours, if avoidable, and the nares should be carefully cleaned and disinfected after its removal.

The constitutional remedies for checking hemorrhage, or preventing its recurrence, such as acetate of lead, ergot, gallic acid, sulphuric acid, and turpentine, may be employed in mild cases, and should have a trial in those of greater severity, when the exact point of bleeding cannot be ascertained. The bleeding due to plethora is best prevented by occasional saline cathartics.

In the great majority of cases of obstinate or frequent epistaxis a careful examination of the nares, under a strong light, will reveal the spot from which the blood escapes. When this can be detected, the best method of treating is to cauterize the spot with either solid nitrate of silver or the galvanocautery; the latter is most satisfactory, but the former will often answer the purpose. During a few months past several cases of serious epistaxis have came under my observation, brief reports of which I am confident will be of interest to you.

Case I.—A. D. P., æt. about forty-five, mechanic. The patient had been suffering from frequent epistaxis for about four months, the bleeding coming on three or four times every day, and from half an ounce to two ounces of blood being lost each time. As a result he was greatly debilitated, and unable to attend to his business. Examining the right naris, from which the hemorrhage occurred, I found the mucous membrane covered with blood, but even after cleansing it I was unable to see the

bleeding point; however, I found that the blood came from the anterior portion of the external wall above the inferior turbinated body. This region I cauterized with a flat electrode, shielded on the opposite side. Two or three treatments were necessary before I succeeded in overcoming the difficulty, but then the patient was completely cured.

CASE II.—A. H. H., æt. nineteen, cashier. For a year had been troubled with bleeding from the nose three or four times a day, losing from one to four drachms each time. As a result he had lost considerably in weight, was weak, short of breath, anæmic, and suffered frequently from headache. He continued at his business, but found the epistaxis exceedingly annoying and debilitating. His tongue was coated, appetite poor, and digestion imperfect. He had received the ordinary constitutional remedies, but without apparent benefit.

Upon a rhinoscopic examination, I found the walls of the left naris covered with blood; but by wiping it away, I discovered a small polypus near the middle of the middle meatus, and near it a small, bleeding papillary body. Having anæsthetized the part, I cauterized the polypus and bleeding-point. Five days later the bleeding had not entirely ceased. I again cauterized the spot from which the blood escaped. This completed the cure, and there has been no return of the hemorrhage.

CASE III.—G. W., æt. thirty-three, liquor-dealer, had been troubled with profuse and frequent epistaxis for ten years, but for a couple of weeks previous to seeing me the hemorrhage had occurred about every second day. In this case the blood would sometimes spurt in a stream, two or three feet from the nostril, and would often continue to flow until faintness occurred. The patient was quite anæmic and weak at the time, but otherwise seemed in good general health, and complained only of headache whenever there was a long interval between the hemorrhages. I found, also, that previous to the occurrence of epistaxis he had suffered from hemorrhoids.

In this case it seemed that formerly the hemorrhages had been beneficial by relieving plethora, but latterly they were affecting the patient seriously because of their frequent occurrence. He stated that he usually lost from one to four pints at each hemorrhage.

Upon examining the nares, I found a small, eroded surface in the left side, on the cartilaginous septum, partially covered with a scale of clotted blood. The right side appeared slightly eroded, but did not show signs of bleeding. I touched the eroded surface on the left side with a galvano-cautery electrode heated to redness, but immediately blood spurted from an artery as large as a knitting-needle, and could not be checked by the hot wire. The patient lost half a pint within five minutes, and the flow was only checked then by plugging the nostril with gauze saturated with tannin, as recommended above. Two days later I removed the plug, and there was no bleeding, but blood had been flowing from the right side of the cartilaginous septum, at a point nearly opposite that from which bleeding had occurred on the left side. When my assistant tried to anæsthetize this side preparatory to cauterization, the slightest touch started the blood. Finally, I touched the bleeding points slightly with the hot wire, but immediately the blood spurted from two small arteries. I then made deep cauterizations and finally checked the hemorrhage, except slight oozing, which was stopped by the tannin tampon. The time occupied in the cauterizations was not much over five minutes, but the patient lost a pint of blood. A few days later he returned, having had bleeding again from the left side. The moment the mucous membrane was touched, blood ran in a stream, so that half a pint was lost within five minutes. The bleeding points were cauterized again, and the hemorrhage checked. I did not see the patient again, but I have heard that he is still troubled with epistaxis.

In this case the treatment was unsatisfactory, every application of the cautery being attended by profuse hemorrhage. I have no doubt that the bleeding could have been checked from these particular spots if he had continued treatment, and by a judicious use of cathartics the plethora might have been otherwise relieved; but I am not surprised that the patient became discouraged.

CASE IV.—Mrs. H., æt. about thirty, had been annoyed by epistaxis three or four times a day for four weeks, which to her had become alarming, though the amount of blood lost had not been sufficient to affect her general health. An examination of the nares with a strong light revealed a bleeding point on the left side of the cartilaginous septum. The mucous membrane was anæsthetized with cocaine, and the point cauterized, with the result of effecting a permanent cure.

CASE V.—The notes of the following case were kindly furnished me by my friend, Dr. J. E. Rhodes, of this city. "R. J., æt. seventy-three, in fairly good health, was seized with epistaxis in the middle of the night, while resting quietly, the blood-stream being continuous, and about the size of a knitting-needle. After a considerable loss of blood, the flow was stopped by cold water applied to the back of the neck. The hemorrhage was controlled in like manner twice subsequently, but the third time the loss of blood was so great that a neighboring physician was called in, other means were resorted to, and plugging of the posterior nares became necessary before the hemorrhage could be stopped. I was summoned, and on my arrival found the patient much exhausted from loss of blood (estimated at about two quarts at this time), and the friends in alarm because efforts had hitherto afforded temporary, but promised no permanent relief. There was no bleeding at this time, but during the next few days there were several hemorrhages, each time controlled by gauze saturated with a mixture of tannic acid, as recommended by Dr. Ingals. This measure would stop the flow, but a few hours after removing the plug bleeding would return. Finally, a thorough examination was made, and the exact bleeding spot located. No galvano-cautery was at hand; therefore, at Dr. Ingals's suggestion, the spot was thoroughly cauterized with fused nitrate of silver. The epistaxis was completely and permanently controlled, much to the delight of the patient, whose suffering

from the posterior plugging had been intense, and who had become well nigh hopeless of permanent relief."

In conclusion, I wish to reiterate the following points:

1st. In ordinary cases, epistaxis ceases spontaneously; therefore, it makes no difference what innocuous treatment is employed.

2d. Epistaxis in children and young adults is generally an effort of nature to relieve plethora, and therefore should not receive active treatment.

3d. Persistent or frequently recurring bleeding from the nose may sometimes be relieved by constitutional remedies, but it usually demands topical treatment.

4th. When bleeding is profuse, it may often be checked by insufflations of cocaine, or the vegetable astringents, which may, if necessary, be supplemented by plugging the nostrils.

5th. When it cannot be checked in this way, the nasal cavity should be treated with iodoform, and then thoroughly plugged from the front with a strip of gauze saturated with tannic acid. This method will nearly always be successful, and, therefore, tamponing of the posterior nares, which is sometimes dangerous, should be employed only as a *dernier ressort*.

6th. In nearly all cases the source of hemorrhage may be detected by careful rhinoscopy.

7th. In these same cases the affection may generally be cured by the judicious use of solid nitrate of silver, or, better yet, by the galvano-cautery.

64 STATE STREET, CHICAGO.

THE RECTAL TREATMENT OF PHTHISIS.

BY H. A. MACCALLUM, M.D.,
OF LONDON, ONTARIO

ON February 2d I first began this treatment, and from ignorance of Bergeon's details fell upon a method of administering this remedy which, as may be seen, is wholly unlike his. Instead of using the remedy in the gaseous state, I inject the watery solution into the bowel, depending on the mechanical and physiological action of its mucous membrane to free and absorb the gas. A perfectly saturated solution is prepared (not less than eight hours should be taken for saturating cold water with sulphuretted hydrogen gas), of which ʒviij are diluted with ʒxx–xxx of water, and securely corked in ale-bottles. The contents of one of these, night and morning, after warming to 90°, are slowly injected into the bowel; not less than thirty minutes should be taken to do this. It is necessary to observe such precautions as would be taken in rectal alimentation, viz., the exclusion of air, the compression of the sphincter ani with the fingers, and afterward by directing the patient to extend the lower limbs. With some patients I precede the solution with laudanum. The majority, after gaining skill and confidence, retain the solution altogether.

As to results: The profession will be disappointed if they look for a "positive cure from phthisis" in this remedy. In no single case have I used it alone, and any results that were extremely favorable might not be wholly ascribable to the rectal mode of treatment.

I would not be surprised to find that the mass of the profession, who are now giving, or about to give this drug a trial, will discard it as worthless, because they are looking for results I feel sure they can never obtain. I think I am fair when I say to patients who have troublsome pains in the chest, expectoration of vast quantities of muco-purulent matter, and but slight loss of flesh, that it is a remedy of great value. Its tendency to disorder digestion, however, greatly diminishes this.

From some crude experiments I am satisfied H_2S is an antiseptic, and to this action I attribute what virtue it possesses. One observer, Hoppe-Seyler, found that H_2S reduced oxyhæmoglobin to hæmoglobin, and after prolonged action a sulphur compound, probably hæmoglobin sulphide, was formed. This work was conducted on pure hæmoglobin. This peculiar action of H_2S on hæmoglobin may possibly occur in this mode of treatment in the blood of the intestinal vessels. If not in union with blood, like oxygen, this gas is carried in solution on its way from the bowel to the lungs.

I have seen three toxic cases. The symptoms of Miss A. will answer for all. She took ʒxij, properly diluted, in three minutes. Five minutes after she complained of oppressive breathing. Her face became pallid, and "her eyes turned up." She passed rapidly into a state of syncope, from which she revived by feeble efforts at vomiting, The solution was still in her bowel when I was called to see her. I ran it off with a hard rubber tube, and gave her brandy. One hour after I found her recovered with the exception of some gastric disturbance, pulse 108, temperature 97°. All three rapidly recovered; had subnormal temperature and gastric trouble for two days. Some patients bear ʒxx diluted without trouble, if more than thirty minutes be taken for its introduction.

I prefer the solution to the gas for the following reasons:

1. The dose is uniform. In Bergeon's method the dose depends on the temperature and strength of the solution.

2. There is no apparatus wanted except a household syringe. I generally prepare several bottles at a visit, directing them to be kept in a cool place. The nurse can prepare the bottles, and in this way patients at a distance can be easily treated.

3. The solution causes less pain to the patient (if it is rejected, another bottle can be used).

4. There is no call for the use of carbon dioxide —a gas considered valueless, and contra-indicated. To say CO_2 is antiseptic is contrary to all physiological truths, and if it possesses any value in phthisis it is due to its sedative action. The blood appears to take up oxygen more rapidly after its use, but even this action is only temporary.

5. Bergeon failed with chlorine gas. I was able to give it in solution and found it well borne. I did not give it for any time, fearing it had a tendency to produce anæmia, by combining with the iron in the hæmoglobin.

In conclusion, I might say this remedy has no value in any but pulmonary lesions of tubercular phthisis. I made no examinations of the bacillus except for diagnosis, for I consider their disappearance from the sputa while the patient is under treatment as proof of the arrest of suppuration in the lungs, and nothing more.

A CLINICAL CONTRIBUTION TO DISEASES OF THE VITREOUS BODY.

By H. F. HANSELL, M.D.,

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In reviewing ophthalmological literature in search of material on the subject of diseases of the vitreous humor, one is surprised at its poverty. The study of microscopic normal and pathological anatomy is monopolized by Hænsell, of France, who in the past few years has contributed numerous and valuable additions to our knowledge ("Bull. Clin. Nat. Ophthal. de l' Hospice d. Quinze-Vingts"). The study of the clinical diseases seems to be limited to a superficial consideration of the different varieties of opacities as associated with diseases of the uveal tract, and with myopia; to an occasional report of so-called hyalitis, and, by our German brethren, of cysticercus.

The vitreous body consists anatomically of a transparent gelatinous material containing cells, interlaced with connective tissue, and surrounded by an elastic, homogeneous, and transparent membrane, the hyaloid. A few cells with one or more nuclei have been found attached to the inner surface of the hyaloid, and are described by Iwanoff and others as a part of the vitreous, and the source of its growth, and by others as white blood-cells which have wandered in from the vessels of the retina and ciliary region. The latter is probably the true belief, for the cells are too few in number and too irregularly placed to fulfil the duties of an epithelial layer. The vitreous is nourished by the surrounding vascular coat as the cornea is nourished by the loops of ciliary vessels at its periphery; and, like it, has no vessels in its own substance except in disease, when offshoots from ciliary vessels find their way into its tissue. In both cases described below, parallel, straight vessels could be plainly seen immediately behind the lens, but in the section examined under the microscope no trace of these vessels could be found.

Case I.—James A., aged three years, rachitic. Between Christmas, 1885, and New Year's, 1886, the boy had chickenpox. Before he had altogether recovered, the mother noticed a peculiar appearance of the left eye, and the boy complained of photophobia and lachrymation. On January 13th I found a pericorneal zone, which gave a light pink hue to the sclera, slight conjunctival injection, cornea clear, pupil fairly dilated and immovable, one small posterior synechia, lens clear, anterior chamber shallow, pupillary border of iris pushed forward. From the pupil shone a clear yellowish-white reflex, which came from a substance in the middle of the vitreous. T.—½. No pain or sensitiveness to pressure. No light perception. Ten days later the following condition was found: Cornea clear, anterior chamber annihilated, lens pushed forward and separated from the cornea only by the iris, and its site occupied by the yellow mass. The reflex came from immediately behind the lens, from its posterior pole to the ciliary region, as far as could be seen, occupying the entire vitreous chamber. The mass had become vascular, at least on its anterior surface, the vessels showing distinctly, running parallel to each other from the periphery to the axis. The external injection had not increased, nor had the symptoms become worse. January 24, the eye was enucleated. Healing normal.

Case II.—William, aged sixteen, who, while convalescent from typhoid fever, became blind in the left eye. No pain. Examination showed cornea clear, anterior chamber annihilated, pupil dilated and immovable, two posterior synechiæ, lens clear and dislocated forward, pressing against the cornea. Yellowish-white reflex from the vitreous. The vitreous body was filled with pus. Behind the lens and adjacent to it could be seen numerous straight parallel bloodvessels running from the ciliary region toward the axis of the ball. Without unnecessary delay the eye was enucleated. Healing favorable. The right eye had been in imminent danger. V.=$\frac{15}{CC}$ on first visit. Vitreous full of shreds. Here was a true hyalitis, with no ophthalmoscopic signs and no symptoms of inflammatory process either in the nerve or retina, choroid, or ciliary body, which, if convalescence had been delayed, or for any reason, local or general, the nutrition of the eye had continued without improvement, would have resulted in a purulent inflammation, with loss of the eye. The effect on the right of the enucleation of the left, if perceptible, could only have been favorable. Six weeks later an artificial eye was inserted into the left socket. The V. of right had improved to $\frac{15}{XL}$. It finally became $\frac{15}{XV}$.

The pathological appearances in both cases were similar; one description only is necessary. Bulbus hardened in Müller's fluid. Cornea and lens normal, but opaque from action of the fluid. Lens dislocated in its capsule forward, carrying the iris against the cornea, obliterating totally the anterior and posterior chambers. The vitreous body is compressed into a layer of about 1‴ in depth, and lies against the posterior surface of the lens and suspensory ligament. The retina is totally detached, and lies immediately back of the compressed vitreous, in a confused mass. A narrow red line, consisting of retinal bloodvessels and clotted blood, connects the retina with the nerve. The vitreous chamber, except that small part occupied by disorganized vitreous and retina, is filled with pus. The choroid is normal and in place. Sclera and nerve normal. The parallel "vessels" seen before enucleation behind the lens were retinal, or new branches from the ciliary, which is more probable, or no vessels at all, but extravasated blood from retinal arteries.

The microscope throws little further light on the condition. In the section examined no trace of new blood-vessels running from the ciliary body into the vitreous, or the pus which filled the vitreous chamber, could be detected. The vitreous substance was compressed or atrophied into an exceedingly thin membrane lying against the posterior surface of the lens, and into the angle formed by the suspensory ligament and ciliary muscle. Retina detached and floating in pus. Ciliary muscle and processes compressed, with no decided changes. Choroid normal. Pus cavity bounded by a thick membrane, which was lying in juxtaposition with the choroid.

The name suggested by Brailey, "spontaneous suppurative hyalitis" (*Trans. Oph. Soc. Unt. Kingd.*, vol. iii.), is appropriate for these cases. The term "hyalitis" is almost obsolete, being seldom met with in the works of recent writers, but if we understand inflammation of the vitreous chamber, and not inflammation of the hyaloid membrane alone, this term designates the nature and seat of the disease. The hyalitis of the old writers is the partial inflammation of the uveal tract—choroiditis or cyclitis with vitreous opacities of the present. While this is correct in many instances, there can be very little doubt that in the few a true inflammation of the vitreous body exists. Estlund (*Arch. f. Ophth.*, xv., 1869) found no trace of inflammation of the choroid in twenty-eight cases of purulent vitreous following typhus fever. He called the disease a cyclitis, because the vitreous was filled with white blood-cells and opacities. The vitreous derives its nourishment from the uveal tract, and any disturbance in the circulation through the vessels of the choroid will be followed by disturbance in the vitreous, which may be intense enough to result in its destruction through purulent inflammation; this is properly a spontaneous suppurative hyalitis.

The right—good—eye of Case II., where the only symptom was vitreous opacity, well illustrates the primary stages of the disease. There was no post. synechia, infiltration of the iris, loss of transparency of cornea or other sign of cyclitis—vitreous opacities excepted; nor could many careful examinations repeated when the vitreous had regained nearly its normal transparency prove the slightest trace of choroidal or retinal inflammation. The retention of the power of accommodation in this eye, and others that recovered (Logetschnikon, *Arch. f. Oph.*, vol. xvi.), is a more or less positive proof of the absence of any severe form of cyclitis.

In Case I. the patient came under observation before the entire vitreous was involved, and the gradual progression of the yellow reflex, until the mass had dislocated the lens into the anterior chamber, was watched. The pus must have formed in the posterior half of the vitreous chamber with little or no involvement even late in the disease of the ciliary region. The usual symptoms of cyclitis were wanting; there was no pain, no sensitiveness either to light or pressure, no want of transparency in the aqueous, or swelling of the iris, and no marked ciliary or conjunctival injection. Cases in which this yellow reflex has been the only peculiar sign of disease, have been mistaken for glioma of the retina, and the error being discovered after enucleation, have been described in a spirit of justification as "pseudo-glioma." This name would suggest a tumor of the retina, which, while not identical with glioma, might be similar to it. Hence it is misleading. Moreover, it expresses no intimation of the true character of the disease, its seat, or its pathology, and should be discarded.

The anatomical examination of the vitreous after the entrance of a foreign body, which has lighted up a circumscribed inflammation, teaches, as is evident from the experiments of Pagenstecher, that there is formed in the irritated part an abundant collection of cells, which show transition stages into connective tissue elements, into which, finally, a portion of the vitreous is transformed. Formerly, before diapedesis was recognized, when, after the entrance of a foreign body in its immediate neighborhood, numerous lymphoid cells were found, without the least change of the stroma cells of the choroid surrounding the wound, we believed ourselves justified in the conclusion that the tissue-cells of the vitreous were the source of the new-formed elements. Pagenstecher's experiments convinced him that the different varieties of cells found in an inflamed vitreous were lymphoid cells in transition stages. It is from these cases in which after a wound, rapid pustulation of the vitreous occurs before a choroiditis suppurativa could have been developed, that v. Gräfe and others have been led to separate the somewhat similar pictures of suppurative hyalitis and purulent choroiditis. "Here is the opportunity to convince one's self that a vitreous abscess can be developed before the slightest signs of inflammation show themselves at the wound." (Von Gräfe and Sämisch, Handb., vol. iv.) The choroid becomes affected only in the late stages, when phthisis is commencing. This long delay is explained by the protection afforded by the thick capsule which forms around the pus; the retraction and breaking up of this capsule, with the irritation it induces, causes irido-choroiditis.

Hutchinson (*Med. Times and Gaz.*, 1872, No. 151) describes a primary pustulation of the vitreous seen in eyes in which the cornea has long been destroyed through ulceration. The pus forms spontaneously with considerable œdema and swelling of the neighboring parts, with a detachment of the pus-infiltrated retina. The choroid retains its normal condition. Stelwag, in a comprehensive account of hyalitis in its different forms, traumatic, contiguous, or spontaneous, makes no mention of fevers as a cause. He describes, however, a purulent hyalitis which very rarely is caused by tuberculosis in which the whole vitreous becomes purulent and partly vascular, the vessels proceeding from the retinal vessels and running in every direction. Nettleship (*Med. Times and Gaz.*, 1880) describes twenty-eight cases of atrophied eyeballs, and in speaking of causes, says: "There is strong reason for connecting nearly every case with infectious blood diseases."

De Wecker distinguishes this affection of the vitreous, which he calls "choroiditis metastica," "irido-choroiditis metastica," from irido-choroiditis due to embolus and embolic infarction. Knapp (*Arch. f. Oph.*, Bd. xiii. 1, p. 127) has determined that metas-

tatic choroiditis is an extensive collection of pus between choroid and retina, with a cell growth at the expense of the stroma of the choroid and iris, leading to a considerable thickening of these tissues and thorough infiltration of the retina and vitreous with pus. In vain has he sought for an embolus of the vessels of the uveal tract. This rapid accumulation of pus in the vitreous crowding the normal tissues aside, argues against a parenchymatous purulent degeneration, and in favor of the theory of an abundant filtration through the walls of the vessels of white blood cells under the influence of an infectious substance in the blood. The anatomical examination by Schmidt (*Arch. f. Oph.*, Bd. xiii. 1, p. 18), of metastatic irido-choroiditis, showed no emboli or thrombi underlying purulent degeneration.

Metastatic choroiditis (de Wecker), as met with in inflammation of the cord in the newborn, in severe typhoid, after scarlet fever, erysipelas, cholera, acute rheumatism, and in tuberculosis, owes its causation to the free communication existing between the lymph spaces of the eye and brain, and is dependent on a peculiar condition of the blood in infectious diseases. In its history and pathology it is different from the form seen in puerperal and pyæmic conditions. Panophthalmitis—an inflammation of every part of the eye, as the name implies—need not be mistaken for spontaneous suppurative hyalitis. The inflammatory action is intense, leading to chemosis, necrosis of the cornea, hypopyon, purulent iritis, and cyclitis, and other signs of an acutely destructive process. It is usually induced by a traumatism, occasionally by embolus or metastasis.

The new cases described in this paper, in conjunction with those referred to, afford strong evidence of the possibility of a spontaneous inflammation of the vitreous body. This inflammation may lead simply to a solution and slight loss of transparency of the vitreous, or to its destruction through pustulation, and in either case is independent of the uveal tract. It is analogous to the different forms of superficial and deep ulceration of the cornea. It may be due to various causes, prominent among which is the exhaustion and debility following low fevers. Recognizing this source as important, it behooves those who have such cases to treat to be apprehensive of the complication, and endeavor by frequent testing of vision and the use of the ophthalmoscope, to prevent disastrous results. If the patient complain of failing vision and opacities are seen floating in the vitreous, energetic supporting measures must be resorted to with the hope of preventing degenerative inflammation. If, however, the yellow reflex has appeared in the pupil, there is no possibility of saving the eye, and enucleation should be practised when the patient is able to sustain the shock of the operation.

HOSPITAL NOTES.

TREATMENT OF CHOLERA INFANTUM.

The Thomas Wilson Sanitarium, Baltimore.

Dr. William D. Booker, Physician-in-charge, directs that the patient be made to lie upon the bed, and all unnecessary handling avoided; thorough cleanliness is observed, soiled clothing and diapers being removed from the room at once, and the room kept well ventilated. Care is taken to protect the body from sudden changes in atmospheric temperature, by suitable regulation of the clothing or wrapping.

In the early stage, when there are high fever and frequent vomiting and purging, as little as possible is taken into the stomach; fresh spring water or pieces of ice are given to relieve the thirst, the quantity allowed depending upon its retention by the stomach. Peptonized beef-tea, if retained, is given in teaspoonful doses every three or four hours, and no milk food allowed until vomiting ceases. Fifteen to twenty drops of brandy in a teaspoonful of water are given every two hours, the quantity and frequency increased as the pulse grows weaker.

The bowels are irrigated once or twice daily with two or three quarts of lukewarm water. A Nélaton's catheter attached to a fountain-syringe is introduced gently, and as high in the rectum as possible; the water is then allowed to run into the gut in a gentle and steady stream until it returns clear. The washing out is thorough, and always given by a physician; it has proved most decidedly beneficial in checking the vomiting and purging, and relieving the stupor. Deodorated tincture of opium, or sulphate of morphia with resorcin, is given by the stomach, if not contraindicated by stupor.

In the stage of collapse the extremities are kept warm with hot-water bottles or cotton wadding; poultices of flaxseed meal and mustard are kept over the belly, and stimulation is increased. Aromatic spirits of ammonia is added to the brandy, and, when the collapse is extreme, tincture of musk, or ether, given hypodermatically. When vomiting ceases, a return to milk food is gradually effected. At first teaspoonful doses of peptonized milk, diluted with water, are given at long intervals, and the quantity and frequency very cautiously increased. If vomiting returns, milk is stopped at once.

When reaction comes on, and the heart's action becomes stronger, the stimulation is gradually diminished. If the diarrhœa persists, it is treated with opium and resorcin, alternating with small doses of nitrate of silver by the mouth, and rectal irrigations. The body is sponged daily with warm water and soap. The dusting powder used is composed of lycopodium with four per cent. of salicylic acid. The greatest care is still observed in the diet, and all the minor details of nursing.

The Children's Hospital, Washington, D. C.

Dr. Samuel S. Adams, to quiet the stomachal irritability, prefers creasote or carbolic acid half a drop in a drachm of lime-water every two hours. Rice-water will sometimes be retained when everything else is rejected. Rubefacients of mustard or cloves may be applied to the epigastrium as counter-irritants.

To check the diarrhœa he has found bismuth subnitrate in cinnamon and lime-water the best combination. It must be given in from three to five grain doses every two hours. In some instances, lead acetate, acetic acid, and lime-water, have proved beneficial; this mixture should be rendered perfectly clear by the addition of the acid, otherwise it should be rejected. These mixtures also seem to exert a soothing effect on the irritable stomach. Benefit is not to be expected from the vege-

table astringents. Some have claimed benefit from the starch-water and laudanum enemata, but his experience has been different.

In all cases the condition of the anterior fontanelle is his guide for stimulating. As long as this is depressed he has no hesitancy in continuing or, perhaps increasing, the stimulant, and it is surprising how well infants bear it. He uses whiskey or brandy, and sometimes a little camphor. In too many cases the stimulation is put off until the infant is too ill to absorb it, or harm is done by leaving it to the discretion of the nurse, when too much is given.

When the temperature is very high, he orders occasional spongings with cool water, whiskey and water, or bay rum and water. During the sponging care should be taken to apply cold wet cloths or an ice-bag to the head, which should be changed frequently.

Of the opiates he prefers the camphorated tincture because it is more manageable, more certain in its action, and least likely to do harm of the preparations of opium. If there is any evidence of jactitation or convulsions, he relies on sodium or potassium bromide.

The infant should be kept in the cool air as much as possible; it should be kept upon a pillow, and not in its nurse's arms, and all superfluous clothing should be removed.

Stimulation and external warmth are the indications for the stage of collapse. He gives whiskey or brandy, and sometimes camphor. To excite cutaneous warmth, hot bottles, warm blankets, and mustard foot baths should be applied.

The infant should have small quantities of milk and lime-water at short intervals; cool water and cracked ice occasionally to allay thirst; the stimulant should be gradually withdrawn; sleep must be secured, if necessary, by the camphorated tincture of opium; cool, fresh air should be secured by taking the advantages offered by the city parks, and discretion in bathing and clothing the infant should be exercised.

Home for Sick Children, Cincinnati.

Dr. Forchheimer bases his treatment upon the following principles:

I. Removal of the cause. II. Treatment of digestive symptoms. III. Treatment of general symptoms and complications.

I. The child must be kept cool if the attack occurs in hot weather. For this purpose all unnecessary clothing must be removed; no flannels, no belly-bands. The patient must be kept in the open air—night air is as good as day air. We need reduced external temperature. If the attack occurs in winter, removal from bad hygienic surroundings becomes imperative. When error in diet can be discovered, quantitative or qualitative, the treatment is begun by administering a laxative dose of calomel. This is not done when the diarrhœa is already profuse.

II. The patient is put upon diet, consisting during the first twelve to twenty-four hours of brandy and water. All water given to these patients first to be boiled, then cooled off; the patient to have as much as needed to quench thirst, but in small quantities at a time. This usually controls vomiting, makes the patient comfortable, reduces the quantity of stools, and the brandy, given in full doses, keeps up the patient's strength. Opium is given in small doses, very carefully, and only for relief of great pain or to prevent too great waste from serous discharges. The remedy that has given more satisfaction than any other is salol, gr. ½–j every two to four hours. When vomiting has been completely controlled, *skimmed* milk, well diluted, is given as food. The milk must be tested with litmus paper before it is given, must be administered in small quantities at a time, and frequently. The quantity to be increased, the dilution to be diminished, and whole milk to be given as the patient convalesces. If the infant be at the breast, it should be allowed to nurse at long intervals, and to take as little as possible at a time.

III. Fever is treated by lukewarm baths, given, if necessary, every hour or two. Occasionally benefit is derived from keeping the infant in a continuous lukewarm bath for one or more hours. Cold baths are never used, as being too dangerous in infants. Antifebrin is being used this year with very good results so far. Collapse is treated by the warm mustard bath, the mustard to be mixed in a small bag of old muslin or linen with cold water, the bag and the baby to be put into the water together. As soon as the attendant's arm, holding the child in the water, begins to tingle from the mustard, it is time to remove the patient. The child is then wrapped in a blanket and bottles with warm water placed around it. All this can be done in the open air if found necessary. In addition, the patient is stimulated by the internal administration of ether, in full doses, musk, or brandy. The ether is given in milk, and repeated frequently. If vomiting continues, hypodermatic injections of ether are given.

Convulsions are treated variously, depending upon their cause. If early in the disease, they are due either to high temperature or blood poisoning. In the first instance antithermic and antipyretic remedies are used; in the second, rectal injections of chloral hydrate. If recurring late in the disease, they are usually caused by disturbance of blood supply to the brain, lack of oxygen, increase of carbonic acid, thickening of the blood within the brain, thrombosis. This form of convulsion cannot be treated with any satisfactory results. Free stimulation is usually indicated.

It goes without saying that the above is to be treated as an example to which there are many individual exceptions.

West Side Dispensary, Chicago.

Dr. J. Suydam Knox treats a case of choleraic diarrhœa with vomiting as follows: Immediately two to five grains of calomel are administered to remove fermenting ingesta. Then bismuth subnitrate and cerium oxalate in full and oft repeated doses for the vomiting and diarrhœa. Cold baths, spongings, or pack for fever and restlessness. In rapid cases, or in collapse, hypodermatics of morphia sulphate, and alcohol or ether; also aromatic spirits of ammonia in ice water for the extreme thirst.

He believes that there is neither digestion nor assimilation during the attack, therefore no food is given. He allows an abundance of ice water for the thirst, and to compensate for the excessive drain of fluids. As soon as the stomach will tolerate food, albumen water and beef peptonoids are given in small quantities, often repeated.

University of Michigan, Ann Arbor.

Dr. Victor C. Vaughan, up to the beginning of the summer of 1886, in his treatment of the choleriform cases, did not restrict the use of milk, and he employed subnitrate of bismuth, pepsin, chalk mixture, and the camphorated tincture of opium, with a dose of castor oil in those cases in which serous discharges had not already appeared, and with astringent enemata of either tannic acid or nitrate of silver in some instances. This treatment was eminently unsatisfactory. A large majority of the violent cases terminated speedily and fatally.

In June, 1886, he began the *no milk* treatment. The prohibition of milk was absolute. If the child was taking a part of the nourishment from the mother's breast, this source of supply, as well as the cow's milk, was forbidden. No prepared food containing milk, or to which milk should be added, was allowed. The child was given a little barley or rice-water, and some meat preparation, as beef-tea or chicken-broth. The only prepared foods which he used at all were the peptonoids of Reed & Carnrick, and the peptone of Rose, and, with the exception of the objection to the taste of the peptone manifested by a number of the children, he was much pleased with these meat preparations. The medicinal treatment was the same as it had been in preceding years, and as given above. Out of twenty-two cases of the choleriform type treated by this method last summer, three died. This, in view of his past experience, was very gratifying. All the cases were severe, and the three deaths occurred within twenty-four hours after the appearance of the first symptoms One of the children had, some three weeks after its recovery, a second attack, when it came under the care of a physician who prescribed one of the infant foods with milk; this time the result was fatal. But this number of cases is too small to draw any positive conclusions from. However, the success seems large when compared with his earlier experience.

MEDICAL PROGRESS.

Why are Preparations of Digitalis Frequently Inert?—Kobert, of Dorpat, answers this question as follows in an article reporting a number of experiments upon digitalis, in the *Therapeutic Gazette* of June 15, 1887: "What form of digitalis shall be employed? Most commonly preferred is the infusion. This naturally contains only those substances soluble in water. Of the three important active principles digitalein, a drug which produces dilatation of the vessels of the kidneys, is soluble in alcohol, it is contained in the tincture and alcoholic extract. The other constituents, digitoxin and digitalin, are also soluble in alcohol; in alcoholic preparations, as well as in the leaves themselves, we obtain the three important active principles. In fluid extracts digitoxin is precipitated as an insoluble powder. Acetum digitalis (vinegar of digitalis) approaches the infusion most closely in regard to its contents. It is very desirable that fresh, well-dried leaves be used. When the leaves are imperfectly dried, a species of fermentation may occur which may decompose the three essential components of the drug, for digitalin and digitalein are, like all glucosides, decomposable through foreign matter and fermentation. Digitoxin is, however, not a glucoside, but decomposes as easily and under the same circumstances as the others. The result of the decomposition of digitalis is not a substance producing the desired effects upon the heart, but a resin, digitaliresin (from digitalein and digitalin) and toxiresin (from digitoxin). The effect of these bodies is a violent irritation of the convulsive centres of the brain; severe convulsions may also occur, as in poisoning with picrotoxine or cicuta verosa. Whenever the usual effects of digitalis are wanting, or instead cramps occur, we are safe in thinking that the preparation used was a poor one. The decomposition of digitalis may occur not only in the leaves, but also in infusions and solutions of digitalin and digitalein. As Tardieu says, 'The pure digitalein when suspended in water or dissolved, undergoes decomposition in a short time, whereby the bitter taste is altered, and, as an indication of a radical change in the constitution of the drug, gases form.' Among my patients I have very often seen decomposition in preparations of digitalis which had stood two days in a room. This happens from the mixing of digitalis tincture with syrup or watery solution. The practice prevalent in America of not preparing the drug from the leaves when desired, but of using a concentrated infusion, explains the frequent disappointment in its use."

The Relief of the Dysuria and Strangury of Old Age.—Fischer has found the following pill useful:

℞.—Ext. nucis vom. . . . . gr. 8.
Liquiritiæ . . . . . q. s.
Ft. pil. 50 in num.
Sig. Two pills on retiring.

—*Deutsche medicinische Wochenschrift*, June 16, 1887.

Simple Amygdalitis and Bicarbonate of Soda.—Rovira y Oliver, of Barcelona, has reached the following conclusions regarding this subject:

1. The simple forms of amygdalitis are superficial from the beginning to the end, or superficial in the beginning, but soon advancing until they become parenchymatous; or they are deeply seated from the commencement.

2. The anginæ disappear within twenty-four hours by dietetic means.

3. The application of bicarbonate of sodium, over a superficially or deeply inflamed tonsil, by neutralizing the acidity and retention of the mucus discharged by the follicles, does not fulfil more than a secondary indication.

4. In this manner bicarbonate of soda may expedite the cure of catarrhal and parenchymatous tonsillitis.

5. Bicarbonate of soda cannot be relied upon as an abortive method of treatment of anginæ of the first group.

6. The action of the soda salt is not efficacious in impeding anginæ of the second group—the advance of the catarrhal to the parenchymatous state.

7. When the stroma of the gland has been affected, bicarbonate of soda can produce a cure in from three to seven days.

8. These effects of bicarbonate are attained by making the applications every two or three hours.

9. It is useless, and may even be dangerous, to apply it, as Dr. Giné recommends, every five minutes.

10. A few styptic drugs, such as sulphate of alumina, are more efficacious than bicarbonate of soda.—*Journal of Laryngology*, June, 1887.

Sixty Cases of Extirpation of the Uterus for Cancer.—Fritsch reports sixty cases from his clinic at Breslau, with a mortality of seven, about ten per cent., from the operation itself. Twenty patients are without a return of the disease, of whom two were operated on three years ago; seven more than two years ago; while the remainder were without a return after the first six months, which Fritsch considers the most dangerous time. He concludes that uterine carcinoma returns less frequently than carcinoma in other localities, and thinks the reason lies in the anatomical relations of the lymphatics of the uterus.—*Centralblatt für Chirurgie*, June 18, 1887.

Death from Tight Lacing.—A sensational illustration of the fatal effects of tight lacing, was afforded last week by the death of a single woman, aged fifty-two, who died quite suddenly in the street. Mr. A. A. Varne, the house-surgeon of the Northwest London Hospital, to which institution the lifeless body was taken, stated that the deceased was a woman who laced very tightly, so much so that she could hardly breathe, and it was owing to the impossibility of proper expansion of the lungs that syncope had been produced. Two years ago he had been called to her in the street; she had fallen down and "broken a bloodvessel." Here is a text which popular health lecturers will be able to use effectively, it may be hoped, and—we fear—for many a long day.—*British Medical Journal*, June 25, 1887.

A Convenient Food for Children.—Marteneau describes the following food, which may be used whenever farina and like foods are indicated.

Farina (Indian corn)	5 parts.
Powdered cocoa	1 part.
Sugar, in the form of vanilla powder	3 parts.

Of this, between three and four ounces may be used in twenty-four hours; it may be prepared by boiling for five minutes in milk. The nutritious substances contained are fat derived from the corn; the butter of cocoa, and phosphate of lime from the grain.—*Revue de Thérapeutique*, June 15, 1887.

A Treatment for Diphtheria.—Kaczorowski reports the following treatment as having been useful in his hands:

It is necessary to consider two factors in the treatment of diphtheria, viz., the local affection, and the consecutive septicæmia. The former is dependent upon specific bacilli, and presents no danger so long as it remains localized. Danger only commences when the infiltrated parts soften and ulceration is produced. At this period the Streptococcus pyogenus of Rosenbach appears, and is propagated throughout the organism. Therapeutics must be directed to limitation of the local process, and to the avoidance of all means which could irritate the mucous membrane and produce collateral inflammation. The author employs the solution of chloride of sodium, 1 per cent., with tincture of iodine, 0.5 per cent.; at first given in doses of a spoonful every half hour, and when improvement appears, every two hours. Under this treatment the false membrane and the infiltration gradually disappear without further trouble. The author employs the same solution as a gargle. Immediately ulceration and signs of general infection appear the author administers alcohol and aromatic remedies, externally and internally. Of these remedies the author gives the preference to camphor and benzoic acid.—*Journal of Laryngology*, May, 1887.

Modified Laryngectomy.—Dr. J. Solis-Cohen describes the following operation in the *New York Medical Journal* of June 18, 1887:

1. Make an incision from the hyoid bone to the lower border of the cricoid cartilage, and exactly in the middle line.

2. Carefully separate the sterno-hyoid muscles.

3. Hold the soft parts aside and insert, from above, one blade of a strong cutting forceps with narrow blades beneath one wing of the thyroid cartilage, one-fourth of an inch from the angle of junction with its fellow, and sever the cartilage vertically its entire length through to the crico-thyroid membrane.

4. Make a similar cut on the opposite side.

5. Seize the freed angular portion of the thyroid cartilage, comprising its entire respiratory contingent, with a volsellum forceps, and draw it to either side, the soft parts being separated meanwhile from the inner surfaces of the detached wings of the thyroid cartilages with the handle of the scalpel.

6. Make a transverse cut to sever the cricoid cartilage from the trachea. (At this step, in the living subject, a sterilized cotton plug should be inserted into the upper end of the trachea, preliminary tracheotomy having been performed previously.) (If the cricoid cartilage is to be retained, disarticulate the arytenoids, and then sever the soft parts above the cricoid instead of below. This modifies the next step in the procedure accordingly.)

7. Lift the cricoid cartilage forward and carefully separate it with the edge of the knife from the inferior cornua of the thyroid, laterally and superiorly, and then from the œsophagus posteriorly.

8. Insert a finger into the pharynx from below and carry its tip over the epiglottis to draw that structure down.

9. Divide the thyrohyoid membrane and the fibrous tissues still holding.

10. Lift out the exsected respiratory portion of the larynx.

The arteries likely to require ligation will comprise small branches of the superior, middle, and inferior laryngeals.

Upon the living subject the operation should be strictly aseptic, and where practicable should have been preceded by several days by a preliminary tracheotomy. The trachea may be occluded superiorly by a small rubber bag attached to the smallest-sized soft catheter, introduced through the tracheal wound, above the canula, and then inflated. The canula may be temporarily removed during the introduction of the bag and its inflation.

Advantages alleged for this procedure:

1. Its rapidity, ease, and comparative safety to the patient.

2. The small size of the wound.

3. The preservation of the attachments of the thyrohyoid ligament and the greater part of the membrane, and of the thyrohyoid, sternohyoid, stylopharyngeus, and inferior constrictor muscles; leaving—

4. Important functional structures retained in their normal relations for deglutition; and leaving—

5. A firm, natural support for the adjustment of artificial substitutes for the larynx.

For these reasons it is submitted that this procedure should be preferred to complete laryngectomy whenever not precluded by extent of disease.

PIMENTA (ALLSPICE) IN THE TREATMENT OF RHEUMATISM.—POULET has made a liniment by combining capsicine, the active principle of the plant, with liquid ammonia, when a soapy liquid results. The following are the proportions:

Pimenta	ʒ 6¼.
Ammonia	ʒ 3¹s.
Essence of thyme,	
Chloral hydrat.	āā ʒ 2½.
Alcohol (60°)	1 quart.

The allspice should be macerated in alcohol for a month, to which the ammonia is added. The chloral and thyme are added after expressing all fluid from the allspice, and the liquid kept in a hermetically sealed bottle. The substance so prepared is called *apone*, and may be used for friction about diseased joints; it may be used pure or mixed with olive oil. Internally from 10 to 20 drops of a tincture of pimenta may be taken in water or cold tea.—*Journal de Médecine*, June 19, 1887.

ACTINOMYCOSIS IN A GARDENER.—A case of actinomycosis occurring in the human subject is reported by Dr. Hanken, of Dortrecht, which appears to belong to what Dr. Israel classes as cases of migration of fungi through the mouth and pharynx. The patient was a gardener, aged thirty-four, who had nothing to do with the care of cattle. He applied for advice on account of long-standing dyspepsia. It was observed that there were four tumors on the lower jaw, situated between the left mental foramen and the angle of the jaw. They were movable and somewhat elastic on palpation. The teeth were fairly healthy, with the exception of the four second molars, all of which were carious; the roots, however, could be palpated without causing pain. The diagnosis appeared to lie between gummata and cold cutaneous abscesses due to irritation from carious teeth in a tuberculous subject. No sign or history of syphilis could be made out, so it was decided to draw the two diseased molars on the left side, open the tumors and scrape them out with a sharp spoon. The contents were found to consist of a viscous chocolate-colored fluid, in which opalescent granules, the size of a pin's head, were suspended; these proved, on microscopic examination, to be actinomycetes.—*Brit. Med. Journ.*, June 25, 1887.

THE TREATMENT OF CHRONIC URTICARIA.—MUSSY recommends the following:

℞.—Jaborandi pulv.,	
Ext. guaiac.	āā gr. 1½.
Lithii benzoat.	gr. 3.

For one pill.

Two in twenty-four hours for those suffering from chronic rheumatic urticaria.—*L'Union Médicale*, June 16, 1887.

HYPNOTISM IN MIDWIFERY.—In the *Gazette des Hôpitaux*, M. DUMONTPALLIER reports a case of delivery during hypnotic sleep. The patient, a young woman, aged twenty-four, was admitted into the Pitié Hospital in the sixth month of pregnancy, in order to be treated for pains in the uterus. The patient was easily thrown into hypnotic somnambulism by pressure on the vertex and by verbal suggestion; these measures were of themselves sufficient to relieve her pain. Later on, in the beginning of labor, hypnotism was again tried. The uterine contractions took place about every ten minutes, and lasted from one minute to one minute and a half. During somnambulism the patient distinctly felt the contractions, but said they were not painful; when not under hypnotic influence, however, the pains became intense, and she begged to be put to sleep again. Toward the end of labor the pain became so severe that it was found impossible to keep her in a state of hypnotism. During somnambulism the contractions were more powerful and shorter; the interval between them was only four minutes. M. Dumontpallier reserves his opinion as to the effect of somnambulism on the frequency and force of the contractions, and on the duration of labor. While the patient was in that condition she was perfectly conscious, and talked freely with the people about her. In making a comparison between the analgesia produced by somnambulism and that by chloroform in midwifery, the author states that they differ only in the fact that under chloroform cutaneous sensibility remains intact, while in the somnambulistic state it is extinguished.

PROSTITUTION AND INSANITY.—At the first (Moscow) congress of Russian Alienists, DR. PRASKOVIA N. TARNOVSKAIA, of St. Petersburg, communicated (*Vratch*, No. 9, 1887, p. 216) the results of the anthropometric examination of fifty habitual prostitutes, who had all been inmates of brothels for a period of not less than two years. For the sake of comparison he examined in the same way fifty peasant women of the same age, and, as far as possible, of the same intellectual development, etc. The results of this—probably unique—investigation may be summed up as follows: 1. The prostitutes presented a shortening, amounting to half a centimetre, of the antero-posterior and transverse diameters of the skull. 2. As many as 84 per cent. of habitual prostitutes showed various signs of physical degeneration, such as irregularity in the shape of the skull, asymmetry of the face, anomalies of the hard palate, teeth, ears, etc. 3. In 82 per cent of the prostitutes the parents were habitual drunkards. 4. In 18 per cent. of cases the prostitute examined was the last survivor of a large family of eight to thirteen children, all of whom had died at an early age. 5. These facts afford grounds for the belief that prostitutes, as a class, furnish the largest contingent of subjects predisposed to nervous and mental affections. There is no special work in any language on this subject, nor are there any statistics as to the number of prostitutes yearly admitted to asylums. Dr. Tarnovskaia urges the desirability of collecting such statistics for the purpose of determining the

part which professional prostitution plays in the causation of mental and nervous disease.—*British Medical Journal*, June 4, 1887.

An Application for Pruritus of the Vulva.—Mènière advises the use of the following:

R.—Zinc. oxid. . . . . ʒ ij½.
Potass. bromid. . . . . ʒ ij½.
Ext. cannabis indic. . . . . gr. 30.
Glycerite of starch . . . . . ʒ j½.

To be preceded by cold bathing.

When complicated by acne, applications of very cold infusion of black tea are useful.—*L'Union Médicale*, June 4, 1887.

Eberth's Rods in Typhoid Stools.—In the *Vrach*, No. 22, 1887, p. 438, Dr. G. O. Shpolansky, of the Odessa Town Hospital, writes that he and Dr. N. A. Stroganoff, prosector of the same hospital, have examined bacterioscopically stools in ninety-six cases of enteric fever, with the object of solving the following two questions of paramount practical importance: 1. Whether Eberth's microbes are present in all cases of the disease or not? and 2. Whether the microbes are still present in the stools of convalescent patients? The main outcome of their researches may be summarized thus. The typhoid bacilli were found in 90 of 96 cases. Of those examined, 88 recovered and 8 died. In one of the latter no bacilli could be detected in the stools during life. In one of three convalescent patients examined no bacilli were found after the temperature had finally returned to the normal range. In the remaining two the microbes were still daily discovered for nine and fifteen days respectively after the defervescence. In view of the facts stated under the first head, a bacterioscopic examination of the stools should be undertaken in every case where any suspicion as to typhoid fever may arise; and in consequence of those adduced under the second, the stools of the patients recovering from enteric fever cannot be considered innocuous for at least fifteen days after the defervescence.—*British Medical Journal*, June 25, 1887.

Tincture of Green Soap as a Vehicle.—Unna, of Hamburg, in the *Monatshefte für Dermatologie*, No. 11, recommends this tincture originally advised by Hebra. He uses the following formula:

Sapon. virid.	100 parts.
Alcohol (95 per cent. or absolute)	50 parts.
Oil of lavender	½ part.

This solution dissolves, in equal weights, chloroform, ol. terebinthinæ, pix liquida, æther petrolei, benzin, æther; of carbon disulphide two-fifths weight at body temperature is dissolved. The utility of this vehicle to dermatologists is apparent.

Fluorides of Ammonium and Iron in Hypertrophy of the Spleen.—Dr. Lucas reports in the *Practitioner* for June, 1887, his researches with these remedies as follows:

The fluoride of ammonium crystallizes in hexagonal prisms, dissolving readily in water, and the solution is colorless, but it acts on glass (for chemical reasons which I need not enter into here), going through it and escaping. To prevent this escape the expedient of coating the inside of the bottle with wax, so as to prevent the unstable compound in solution from coming in contact with glass, has to be resorted to; or the solution may be kept in India-rubber tubes or gutta-percha bottles. I adopted the first-named plan, and did not cause more of the solution to be made than was actually wanted for use. The strength of the solution employed by me was four grains to the ounce. Of this liquor ammonii fluoridii I began with five minim doses, diluted in an ounce of water, and administered thrice a day, after meals; and the dose, after a day or two, may be increased to 8 minims, then to 10, 12, 15, 18, 20, and so on, at intervals of a few days, the increase being effected gradually and cautiously; the great point to attend to is to insure the taking of this medicine after food, as otherwise gastric and intestinal irritation will be set up, while with this precaution it will be found to be fairly well tolerated in the majority of cases.

Certain physiological effects, more or less common to all the cases, were observed. Briefly, there was a marked influence on the blood-pressure, which had a downward tendency at first; the pulse fluctuated, and the number of beats was lessened. It was also found that the drug possessed antipyretic properties when the temperature ranged above the normal point, and it prevented attacks of ague, thus proving it to be an anti-periodic. In all the cases it produced nausea at first, though gradually a sort of tolerance appeared to have been established, and the drug could be borne in much larger doses. It produces some intestinal irritation, probably acting more on the duodenum, and giving rise to some diarrhœa. I am not sure that it has any action as a hepatic stimulant. The appetite, after a time, improves under its use. Almost all the patients complained of a pricking or twisting pain or uneasiness in the spleen itself, the original pain being sometimes aggravated. When given carefully and after meals, which should be the invariable rule, it is better borne and does not produce nausea and purging to the same extent. It certainly seems to excel any other method of treatment with which we are acquainted. Although I began with small (5 minim) doses, I should be disposed to start with 20 or even 30 minims diluted in an ounce or two of water, and administered always after a meal. The combination of iron with hydrofluoric acid, I am inclined to think, would prove more valuable on account of the hæmatinic properties of the former, and because as an adjunct it would exercise its astringent and tonic influence on the mucous lining of the stomach and intestines, and thus in a great measure tend to counteract the unpleasant effects complained of, and perhaps also to augment the evident specific action on the spleen. The fluoride of quinine can easily be prepared, and so, also, can the triple fluoride of iron, quinine, and ammonium.

Hyoscine as a Hypnotic.—Kobert, of Dorpat, concludes from his studies of the action of hyoscine on the brain of normal men, that it is a feeble hypnotic which has no such influence over animals. In cases which other narcotics fail to affect, the repeated injection of $\frac{1}{100}$ to $\frac{1}{75}$ of a grain caused sleep and quietude without ill after effects.—*Deutsche medicinische Wochenschrift*, June 9, 1887.

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THE RESULTS OF PYLORECTOMY.

CONSIDERABLY more than one hundred cases of pylorectomy have been performed since Pean, in April, 1879, first demonstrated that a patient could survive some days after such a mutilation, and Billroth, that recovery was possible under the same circumstances. Since then various opinions have been held in regard to the justifiability of the operation, and in regard to the benefits to accrue from it; and carefully prepared articles have appeared in different lands and languages, in which the indications and contra-indications, the operative technique, complications, and the percentages of deaths and recoveries have been critically studied; but until recently sufficient time had not elapsed in which to learn the final results of the operation. Six years have now passed since the first successful cases were reported, and we are able to form a tolerably accurate idea as to the indications for the operation, the rate of mortality, and the final results in those cases which recovered.

The indications for the operation have been stated to be carcinoma of the pylorus, cicatricial stenosis, hemorrhage from the stomach, and perforation of the stomach, but only the first two need claim our attention at this time.

The pylorus has been excised for cancer many more times than for any other cause, and the death-rate is about 75 per cent., whilst that for cicatricial stenosis, whether from an ulcer or from the ingestion of caustic liquids, is about 50 per cent. The mortality of 103 cases of all kinds, collected by Richter, in August, 1886, was 72 per cent., and this percentage remains about the same in each series of statistics which have been published. In the hands of individual operators the mortality is not so great, thus the death-rate in Billroth's clinic has been 55 per cent., according to von Hacker, in his monograph, "Ueber die Magenoperationen an Prof. Billroth's Klinik, 1880, bis März, 1886." Not only, however, is the mortality much greater in the case of cancer than in that of cicatricial stenosis, but there is a great difference in their final results. There is no case known to us in which a radical cure has resulted from excision of the cancerous pylorus, death taking place in from four months to five years from a recurrence of the disease, either *in situ* or in more or less remote regions. Of 15 cases in which recovery occurred, 2 died four months subsequently, 2 in six months (one of these, however, succumbed to pneumonia), 1 in eight and a half months, 1 in ten months, 3 in twelve months, 1 in fifteen months, 2 in two and a half years, 1 in three, and 1 in five years, and 1 patient is reported alive at the expiration of two years. There is probably no case in which a permanent cure has been effected where the disease was cancer, the longest period of life having been five years and three months. In four or five cases of which we have knowledge, the patients were restored to a tolerable degree of usefulness, the gastric distress relieved, and normal digestion attained for a period of more than two years, and about an equal number for twelve or fifteen months, but the immediate mortality of the operation is so enormous, that the small respite enjoyed by the few scarcely counterbalances it. It must be confessed, however, that the future of the operation does appear to be rather less gloomy than it was some time ago.

In regard to resection for non-malignant stenosis, the matter is placed in much more favorable light, since those cases which do not succumb to the operation are permanently cured. At the recent Congress of German Surgeons, RYDYGIER, of Culm, reported the further progress of two cases, in which he had performed pylorectomy for ulcer. One of these, a woman, had survived nearly six years, had borne two girls, and was in good health at that time, another was alive when last heard from, about three years having elapsed; and a man upon whom Billroth had operated was in the enjoyment of perfect health at the expiration of three years. Rydygier advocates the operation in the case of ulcer of the pyloric end of the stomach, but this certainly does seem to be a severe and dangerous method for a non-malignant disease. If the ulcer was not situated exactly at the pyloric opening, it would seem to admit of some other treatment, either excision or cauterization with the thermocautery; whilst, if the pylorus was the first affected, a partial resection might be done. For cases in which cicatricial stenosis has occurred, we think the favorable results of

digital division, as practised by Loreta, demand earnest consideration, as the mortality is very much less and the results appear to be good. In a case of cicatricial stenosis, Mikulicz made an incision in the length of the canal, and united the incision in the transverse direction, which had the effect of widening the strictured opening; but, unfortunately, the patient died on the third day of collapse. Heineke had also previously adopted this method.

An observation of Kocher's indicates that the dangers of pylorectomy do not cease with recovery from the operation, nor with the escape from recurrence of malignant disease, since in two cases upon which he had successfully operated, one died six months and the other three years subsequently, with decided symptoms of a fresh stenosis. This is a new experience, and may be due to the peculiar method of operating employed by this surgeon, in which the edges of the incisions were crushed with forceps previous to uniting the stomach and duodenum. Woelfler, on the other hand, stated that in his case, which survived five years after the removal of a scirrhus of the pylorus, there was no stenosis: the entrance into the duodenum was funnel-shaped, and pervious for the thumb, a four millimetre mucous fold occupied the seat of junction, whilst externally the seat of operation was no longer recognizable, and the sutures were not to be found.

Before leaving this subject, we wish to call attention more earnestly to the operation of gastro-enterostomy, or the formation of a fistula between the stomach and jejunum. It has been performed but a few times, and generally for inoperable carcinoma: but as it is easier to perform than resection, takes less time, and is not followed by so much shock, it certainly deserves a greater trial than has been bestowed upon it. It must be remembered that neither operation is radical, but only palliative, hence that which exposes the patient to the least risk ought to be given the preference. Hahn, of Berlin, expresses this same view, when he says the operation is a good one in certain cases, and is the operation of the future. He performed gastro-enterostomy on a man over two years ago, on account of carcinoma of the pylorus. The man was forty-six years of age, and had emaciated rapidly; and nothing appeared to pass the pylorus. Gastro-enterostomy was performed, and the patient gained fifty-four pounds in weight, ten of which were gained in three weeks. He was still alive and following his work when the case was reported.

In conclusion, we may state that pylorectomy is fatal in the proportion of about 75 per cent. in the case of carcinoma, and that of the 25 per cent. which survived the operation, death has occurred from recurrence in one year or under in 60 per cent., and that, as far as appears at present, not a single case has been permanently cured. In consideration of these facts, well may we pause before subjecting a patient to this dangerous procedure. We have long been impressed with the idea that gastro-enterostomy was indicated much more frequently than pylorectomy, an opinion which is held by Hahn also. The mortality after resection for cicatricial stenosis is about fifty per cent., and as these cases are radically cured, it is certainly permissible to operate, though the Loreta operation ought to be carefully considered.

THE DANGERS OF ANTIPYRIN.

Apropos of the several editorials which have recently appeared in The News on the subject of antipyretics, it seems proper to call attention to the possibility of untoward symptoms being produced by at least one of them. While it is possible for any drug to produce evil effects when used in excess, there are some drugs which seem to bring about disagreeable consequences in those who by reason of idiosyncrasy are affected by small doses, as violently as the average person would be by an enormous amount.

As has already been pointed out in these columns, antipyrin is a very safe remedy, very few people having an idiosyncrasy in regard to its action, but, nevertheless, it is but right and proper that instances where its influence has been for harm rather than good, should be brought before the profession. Several instances in which cardiac failure and collapse have come on, have been reported, both in this city and elsewhere, within the last two or three years: and very recently, in the *Journal de Médecine de Paris* of May 29, 1887, attention is again called to the subject by the report of the case of a young woman, in the eighth month of pregnancy, who suffering from an attack of typhoid fever, accompanied with hyperpyrexia, was given cold baths for the reduction of the temperature. She was also given fifteen grains of antipyrin in divided doses. In a short time the temperature fell below normal, there were vomiting, cyanosis, hesitating and embarrassed respiration, and absolute relaxation, and collapse. The patient, however, recovered.

The action of drugs on persons readily affected by them, owing to idiosyncrasy, is so commonly met with, and yet so little understood, that it is impossible for the practitioner to be aware of such cases unless previous experience has taught him that any one patient belongs to this class, and it is the duty of every one to record such cases, since it is only by this means that we can obtain information which will aid us in laying down preventive rules.

It has been abundantly proved, both by the bedside and in the laboratory, that antipyrin is not a cardiac depressant, yet cases of cardiac depression

apparently from its use have certainly been reported. An important point as to the use of antipyrin in fever is that moderate doses will generally accomplish all that is desired, and we cannot help feeling that in many instances direct injury is produced by a disregard of this fact.

It has been proved by investigators that antipyrin in very large doses, instead of stimulating the inhibitory heat-centre, and thereby decreasing the production of heat, paralyzes it, and thereby causes an enormous rise of temperature, so that it is possible that in some of the cases reported, in which the temperature rose rather than fell, the dose of the drug was too large. On the other hand, it is easy to understand how in susceptible persons the inhibitory heat-centre may be so stimulated by a small dose that the production of heat falls below the dissipation, with a consequent lowering of bodily temperature and a necessary collapse. It is always advisable to give antipyrin, therefore, in small doses at first, in order to avoid dangers from idiosyncrasy and overaction of the drug; ten grains, we believe, will accomplish, as a general rule, all that we have been accustomed to expect from twice or thrice this amount.

FŒTAL MEASUREMENTS.

MOST obstetric authorities have taught that there is no difference in size between the male and the female pelvis at birth; in other words, that there is an entire absence of sexual characteristics. So, too, it has been claimed that the head of the male fœtus is larger than that of the female, the general size of the fœtuses being the same.

The recent measurements of thirty-three infants made by FRASCANI, however, prove that these statements are erroneous. Thus, while he found the biacromial diameter about the same in the two sexes, the bistrochanteric and the bisiliac are greater in the female. He also found that in the male and female fœtus, of equal weights, the head diameters corresponded, and hence the opinion sustained by Sir James Y. Simpson, among others, that labor in case the child is male, will be more difficult because its head is larger, falls to the ground, for the labor is no more hindered than if the child were female, and of equal size.

It is to be hoped that Frascani's investigations will be continued by others, and if confirmed they will not only show quite conclusively that there is no difference between the sexes so far as original brain endowment is concerned, but also that nature begins in intrauterine life the preparation of the female pelvis for childbearing.

IPECACUANHA IN LABOR.

CARRIGEI, in the *Revue Médico-Chirurgicale des Maladies des Femmes* of May 25th, states that from the remarkable influence ipecacuanha has over uterine hemorrhage he has been led to employ it as an oxytocic. He claims that it stimulates the uterus, and at the same time facilitates dilatation of the rigid os; under its use uterine contractions, hitherto very painful, but without effect upon the os, become changed, so that they have an active, expulsive character, and cause less suffering. The quantity advised is a grain and a half to three grains of the powdered root.

This practice is by no means new, though the quantity of the medicine advised is much less than that heretofore employed; we have known of the remedy being used more than thirty years ago in cases of tedious labor in the first stage, the delay resulting from a rigid os, and it was given in doses of five grains every ten minutes until decided nausea, if not actual vomiting, resulted. The beneficial result was attributed, not to any special action upon the uterus, but to the relaxation of the os which usually occurs in consequence of great nausea. But probably the treatment was never very generally followed, and has fallen into disuse. It certainly will be a very great gain if, with so simple a remedy, and in so small a dose, the first stage of labor prolonged by a resisting os, and attended with severe suffering, can be shortened and the pain lessened.

THE Medical Department of the University of Vermont held its Thirty-fourth Annual Commencement last Monday, and the degree of M.D. was conferred on fifty-three graduates.

THE toy pistol has this year, as formerly, occasioned not a few deaths by tetanus. A case recently came to our knowledge where a lad of twelve years died at the end of ten days after he had shot himself in the hand with one of these toys. The wound appeared to be slight, and the parents did not think it necessary to summon surgical aid until tetanic symptoms manifested themselves. It is to be hoped that the time will soon come when the manufacture and sale of these deadly playthings will be suppressed by the strong arm of the law.

A PRIZE of $5000 is offered by the Grocers' Guild of London, for an original discovery in sanitary science. The successful essayist is expected to discover a method by which vaccine may be cultivated apart from the animal body without loss of potency. The prize is known as the "Quadrennial Discovery Prize," and the subject above indicated is the same as that which was proposed during the four years, 1883–1886, and which failed of solution by any of the competitors. Competing essays will be received from any source, and must be forwarded on or before

December 31, 1805, to the Worshipful Company of Grocers.

With profound regret we record the death of Dr. Joseph C. Hutchison, which sad event occurred at his residence in Brooklyn, on July 17, 1887, the result of renal disease, with complications of both cardiac and pulmonary sequelæ. Dr. Hutchison was the son of Dr. Nathaniel Hutchison, formerly of Booneville, Missouri, and he was born in that State in 1827. He graduated in medicine at the University of Pennsylvania in 1848, and spent the first four years of his practice in his native State, after which he removed to Brooklyn, where he soon enjoyed an extensive hospital and private practice, and was called upon to perform the most important and difficult operations of surgery. He was Professor of Operative and Clinical Surgery in the Long Island College Hospital for several years, and enriched surgical literature by numerous valuable contributions. He was the founder of the Brooklyn Orthopædic Infirmary, and its chief surgeon for many years.

As a physician he was distinguished for his study of cholera, having had charge of the Brooklyn cholera hospital during the epidemic of 1854; he had been also Health Commissioner of Brooklyn for several years.

Dr. Hutchison held positions of honor in the medical societies of Brooklyn and vicinity; he was a Fellow and formerly Vice-President of the New York Academy of Medicine, member of the New York Pathological Society, of the American Surgical Association, attending surgeon to the Brooklyn City Hospital, and consulting surgeon to the Kings County, St. John's, and St. Peter's hospitals. He was the President of the Long Island College Hospital, and ex-President of the Medical Society of the State of New York.

He was the author of a school text-book on physiology and hygiene, and a frequent contributor to the medical press. As a surgeon he enjoyed an international reputation. Very positive in his opinions, he was slow to assert them, and firm in convictions, he was tolerant of the views of others.

He was universally honored and esteemed, and his death is mourned alike by the profession and by his fellow-citizens.

Dr. Ariel Ballou, one of the oldest and best known physicians of Rhode Island, died at Providence, on the 15th inst., aged eighty-two years. He was born in Cumberland, R. I., his father having been a Revolutionary soldier. He was, for a time, a student at the Berkshire Medical Institute, but was graduated from the Bowdoin Medical School, in 1830. Beginning practice at Woonsocket, R. I., he soon rose to the front rank of his profession, where he remained for nearly fifty-five years. About two years ago he withdrew from practice and removed to Providence.

Dr. Ballou was a man of genial, yet commanding, presence, and few men have been more highly honored and esteemed than he was, both as a physician and a citizen. He was President of the Rhode Island Medical Society in 1855–56, and one of its Censors ever since. He was a member of the General Assembly from 1842 to 1852, and introduced the bill for the abolition of capital punishment. He was President of the Board of Trustees of the Harris Institute, and of the Board of Corporators of the Woonsocket Hospital. In the Masonic order he had advanced to a high degree, being Past Grand Master of Masons of Rhode Island.

Dr. Ballou will long be remembered by his younger professional brothers as a most earnest, dignified, and honorable promoter of the interests of medical science and practice.

REVIEWS.

The Practitioner's Handbook of Treatment, or The Principles of Therapeutics. By J. Milner Fothergill, M.D., Physician to the City of London Hospital for Diseases of the Chest, etc. Third American from the Third English Edition. Pp. 660. Philadelphia: Lea Brothers & Co., 1887.

Dr. Fothergill is always interesting and instructive, and in this standard work he shows his peculiar power as a writer on therapeutics to the best advantage. Everything he undertakes is done conscientiously, and if at times he is not truly sound in the doctrines which he advocates, he, nevertheless, always commands our respect and attention.

The present edition, besides being carefully revised, has been enlarged by two chapters—one on "The Dietary in Acute Disease and Malassimilation," and one on "The Management of Convalescence," and is nearly one hundred pages larger than the first edition. A few years ago, in reviewing the first edition of this work, we took occasion to criticise the author's opinion on some subjects, especially that on the non-nutritive value of beef-tea. In confirmation of the view then expressed we have since found abundant experimental proof that this preparation is nutritive, and, therefore, not useless as a food.

In the Chapter on "Assimilation" the author evidently shows that he is not quite up in the latest work on the physiology of digestion, when he says (page 39) that "The first great function of the liver is to form glycogen from the sugar and peptones supplied to it from the intestines." We think it is now about two years since Hofmeister demonstrated that the peptones disappear in, and are absorbed by the white corpuscles of the intestinal mucous membrane, in the same manner as the oxygen of the air unites with the hæmoglobin of the red corpuscles, and are by them probably converted into some other form of albumen, since their identity as

peptones is lost here, and practically, therefore, they cannot reach the liver.

In regard to the artificial digestion of foods, we hardly think it advisable to commend the method so strongly as the author is inclined to do. Digestion is not such a simple function as it is believed to be, and since there is at present such a tendency to substitute the artificial for the natural it is well enough to take a conservative position on this question until its utility is proved beyond a doubt.

In conclusion, we would say that the book well sustains the favorable impression which it created at the beginning of its career, and in its present improved form will be welcomed more than ever by the busy practitioner and the scientific student of medicine.

CORRESPONDENCE.

ANTIFEBRIN AS AN ANODYNE IN SPINAL SYPHILIS.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS of June 11, and in the *British Medical Journal* of the same date, reference is made to Germain Sée's observations on the analgesic action of *antipyrin*. Dr. C. W. Suckling, in a note to the latter journal, states that he has tried antipyrin in "three cases of locomotor ataxia, in which the pains were severe, with relief in each instance," and "in one case, with complete abeyance." He states also that Lépine has found that *antifebrin* relieves the pain in this disease. Germain Sée, however, state that *antifebrin* is inefficacious as an anodyne in doses of less than eight grains, and that it is dangerous in larger doses than this, it having been found that larger doses sometimes cause grave alterations in the blood, converting the hæmoglobin into metahæmoglobin (*L'Union Médicale*, April 26, 1887), and for these reasons he prefers antipyrin, the use of which is not attended, in his opinion, with equal disadvantages.

The same objection, viz., that a condition of cyanosis is sometimes caused, has also been urged against antipyrin, and I think that in the employment of both these drugs we should keep a careful lookout for the occurrence of symptoms pointing to imperfect oxygenation of the blood. I have given antifebrin to perhaps twenty patients suffering from typhoid fever and from the hectic fever of phthisis, and have rarely found it necessary to exceed five grains at one dose, in order to get a decided effect from this drug.

In the case of spinal syphilis, to which I now refer, the pains, which were severe, yielded to five grain doses of antifebrin. The pains were due, I believe, to gummatous infiltration of the posterior columns of the spinal cord. The patient contracted syphilis twenty-two years ago, and when I first saw him, ten years after the primary lesion, he complained of severe intercostal pains; so, even at that time, it is probable that there had been some infiltration of the spinal cord. A few months later *right* optic atrophy occurred, and hearing in the *left* ear became much impaired. At about this time paralysis of the facial muscles and hemianæsthesia of the tongue occurred. In 1880 he had a fall on his head, and, a little while later, was found to be suffering from mental aberration and was treated for some months at the Insane Department of the Philadelphia Hospital, and, later, at the Norristown Asylum.

In 1881 there was marked paresis of the left leg, and severe intercostal and girdle pains were complained of. Under specific treatment, the pains diminished in severity, but, since another attack of left hemiplegia last autumn, they seem to have occurred more frequently and with greater severity. They were described as sharp, cutting pains, and extended from the upper intercostal spaces to the sacrum and also along the course of both sciatic nerves, more particularly the left. There has been, at no time, any paralysis of the bladder.

On June 22d, having administered several quarter-grain doses of morphia with the effect of giving him only temporary relief, I ordered him antifebrin (grs. v) to be taken whenever pains were particularly severe. One week later patient stated that he had not felt so well for a year. The first powder checked the pain in less than half an hour. When the pains recurred they seem to have been less violent, and, each time, five grains of antifebrin sufficed to check them, and so, after five days of this treatment, and after taking forty or fifty grains of antifebrin, patient is, temporarily at least, entirely free from pain.

July 8th. Patient has had slight recurrence of the pains during the past week, but they were apparently far less severe than they were before. No sweating and no prostration were caused by these doses.

Yours, etc.,

HENRY M. FISHER.

PHILADELPHIA, July 11, 1887.

A LETTER FROM STRASSBURG.

Septic Cyst in the Abdomen—Removal of the Ovaries for Myoma—Phosphorus in Rachitis.

THE most interesting case of the past week in any of the clinics here, was in the gynecological clinic of Prof. Freund. The patient was thirty-one years old, married, and the mother of three children. The family history was good, except that a grandmother had died with tuberculosis.

Two years ago the tumor was accidentally discovered by a physician who was called to prescribe for some derangement not dependent upon the presence of the growth. At this time she was pregnant and passed through her pregnancy and confinement without mishap. The tumor, however, began to grow very rapidly, and several weeks after confinement it was tapped and three quarts of light straw-colored fluid withdrawn. No accident or bad effect followed this puncture, but before many months had passed, the tumor began to grow again. The patient became pregnant and was delivered at term—three months and a half ago. The tumor again began to grow rapidly and became so large that the physician again punctured it, five weeks post-partum. The contents were of the same character as at the time of the first tapping, but the result was different. The canula infected the tumor and suppuration within the sac resulted. It filled again in a very short time and the patient had fever and chills. Her physician determined to insert a canula, and leaving it in situ to wash out the sac every day, which he accordingly did nineteen days before she was brought to the hospital. But

unfortunately the canula must have slipped out of the cyst and remained buried in the abdominal wall, where the injections of iodine were consequently made, causing the formation of a large abscess cavity, which had dissected its way between the layers of the abdominal wall. This canula was left in for two weeks and the injections made with great regularity. But as the patient's condition was rapidly growing worse, she was finally sent to the hospital. Her temperature varied between 38° and 40 C. Her strength was gone. The abscess in the abdominal wall was discharging an exceedingly offensive pus. Her face wore an anxious expression, and she seemed to all to be on the brink of the grave.

Prof. Freund very soon decided that delay would be fatal, and that her only chances lay in an immediate operation, which he proceeded to perform by opening the abdomen in the linea alba below the umbilicus. The abscess was in the side and toward the crest of the ilium. The tumor was found closely adherent to the anterior abdominal wall throughout the entire length of the incision, which was then immediately lengthened upward until the upper edge of the tumor had been passed and it was possible to get into the abdominal cavity. Then began a most tedious dissection. The adhesions anteriorly to the abdominal wall were carefully broken through. The abscess was now found to have no connection whatsoever with the tumor. The omentum, small intestine, sigmoid flexure, and uterus were all intimately adherent to the tumor. Finally the pedicle was reached. It was twisted several times upon its long axis and a fold of small intestine was twisted with it and adherent to it. The contents of the tumor, which was semi-solid, were offensive in the extreme. A large mass of necrotic tissue was found in the cavity surrounded by fluid and gas, the result of the infection and consequent putrefaction. The intestine and colon wherever their peritoneal covering had been torn loose in the dissection, were now covered with peritoneum as far as possible by means of catgut sutures, the pedicle carefully ligated, the opposite ovary, which also contained several small cysts, removed, and the abdomen closed after irrigation with a solution of salicylic acid.

Toward the close of the operation the patient was in a very bad condition. The shock of such a tedious, protracted operation threatened to prove fatal, but she was almost instantly relieved by a rectal injection of hot red wine with a few drops of the tincture of opium. The result of this injection was simply marvellous; pulse and respiration improved in a very short time, and the abdomen was rapidly closed without any provision for drainage. The abscess was opened, its walls scraped out with the sharp spoon, and dressed with iodoform.

The next morning there was no fever and the only unfavorable symptom was the chloroform vomiting, which, however, ceased in the afternoon. The second and third day passed without an unfavorable symptom. The further course of the case will be reported in my next letter.

Prof. Freund accounted for the twisting of the pedicle by the fact that the patient had been pregnant twice, and that the tumor was probably turned partly around by the increasing size of the uterus as the pregnancies advanced on the one hand, and by its rapid diminution in size after the birth of the children on the other. The intestine was probably adherent and so was drawn around after the pedicle.

A slight parotitis with some fever was the only interruption to an otherwise rapid recovery. Such triumphs as this, are, unfortunately, not common, but the very fact that success is possible even in the face of such unpromising conditions as existed in this case is encouraging to those who are reluctant to accept the responsibility of advising any interference in desperate cases. The possibilities of abdominal surgery have long since exceeded the limit which only a few years ago could not have been passed without exposing the operator to criticism.

Judging from the past, it is confidently to be expected that this field must still be enlarged in the near future, and this operation is significant of the direction in which this enlargement is gradually taking place—*i. e.*, the indication for operating to combat septic inflammatory processes of and within the peritoneal cavity.

The same operator recently removed both ovaries from a patient in the thirties, on account of a large intramural myoma of the uterus. The almost continual hemorrhages had so weakened her that she was unable to attend to her household duties. A vaginal examination revealed a tumor which gave an indistinct fluctuating sensation to the finger, and which from its position in the left side of the pelvis so concealed the left ovary that the presence of the latter could not be determined. A positive diagnosis was, therefore, not made, but from the clinical history a uterine tumor was thought probably to be present.

The operation, which was performed in the new hospital, was conducted under the most careful antiseptic rules. The operating room, with its polished hard wood sides and tiled floor, kept scrupulously clean and neat, is certainly a model chirurgical work-room, and offers no congenial resting-place to septic germs. The few invited guests were politely requested to cleanse their hands in a disinfecting solution, and to clothe themselves in a long linen garment before entering into this temple of cleanliness. The only exception was in the case of three students who appeared in full evening dress. Prof. Freund remarked, that clinical teaching to a large class is impossible in abdominal surgery and, therefore, he has the students come in small divisions in order that each one can see every step of at least one operation. It is true not only of abdominal surgery but of all other branches, that students profit but little from surgical clinics as far as the minutiæ, upon which everything depends in so many cases, are concerned. The science of surgery can be taught to large classes but the art cannot be.

The bleeding and oozing in the incision through the abdominal wall was completely controlled before the peritoneal cavity was opened. The exploration of the cavity revealed a tumor, soft but not fluctuating, in the uterine wall. The right ovary was normal, but the left one was enlarged, and in the left Fallopian tube a small cyst was found.

The right ovary was first removed. Its base was securely ligated by transfixing the broad ligament immediately beneath it in several places with a needle threaded with silk. The base thus perforated was first ligated in sections, and then *en masse* in the usual manner. The ovary was now cut away, leaving a large

stump above the ligatures. The operator now pressed all of the fluids out of the tissues in the stump by means of a sponge, in which it was entirely enveloped. When the sponge was removed the stump remained a moment colorless, but as the vessels filled with blood the pink color gradually returned, and a few drops of blood appeared upon the cut surface. A new ligature was thrown around and tied very tightly, the stump again pressed out, and the same manœuvre repeated, until finally it remained entirely bloodless.

The stump was now secured in a clamp with broad flat arms (Langenbeck's) about a fifth of an inch above the line of the ligatures, the tissues above the clamp seized with a pair of toothed forceps, and cut off with the thermocautery, which was passed along the surface of the clamp. This process left a short stump, securely ligated, from whose surface no oozing could possibly take place. The left ovary and the small cyst near it were removed separately in the same manner. The incision was closed with wire and silk sutures, without drainage. The patient made a prompt recovery without a single unfavorable symptom.

In the Children's Clinic here they do not make as favorable a report of the action of phosphorus in rachitis as has come from other sources. The rachitic material here, as in other unhygienic and overcrowded European cities, is very large. Phosphorus was tried perseveringly, as it is claimed, without an improvement in any case that might not as well have been attributed to the improved diet and hygienic surroundings which the hospital offers to the little unfortunates who find their way within its portals.

Phosphorus has proved, in some hands at least, of the greatest value in this disease. The results are not, as a rule, as prompt as the first publications gave reason to expect, but they are, nevertheless, undoubted, and when the cases have not gone on too far, may be confidently expected. Your correspondent can refer to the records of a Children's Polyclinic which will corroborate all of the above, and which will probably, in the near future, be published.

NEWS ITEMS.

Dr. C. B. Nancrede, of Philadelphia, is delivering the Course of Lectures on Surgery at Dartmouth College, in the absence of Dr. P. S. Connor, who has gone to Alaska on a journey undertaken to restore his health.

The Exposition of the Hygiene of Infancy at Paris.—This exposition was opened, on June 24th, by an address from its president, the recitation of a poem, and by music from the Guard of the Republic. It embraces all possible appliances for maintaining the lives of infants, and all substances and articles known to be of value in treating the diseases of infancy.

During the exposition open conferences will be held morning and afternoon, the first of which will be reserved for mothers. Vaccination will be performed every Monday.

Exhibition at Wiesbaden.—A scientific exhibition will be connected with the Sixtieth Congress of German Naturalists and Physicians, to be held in Wiesbaden from the 15th to the 24th of September. It will be strictly scientific, not mercantile, and its purpose will be to show at a glance the latest and most perfected instruments and apparatus which have been placed at the disposal of science and medicine in the last few years. The following groups will form part of it: surgery, physical diagnosis, and therapeutics; ophthalmology, gynecology; laryngology, rhinology, and otology; orthopedics, dentistry, chemistry, instruments of precision, with subdivision for microscopy; instruments and apparatus aiding instruction in natural history, geography, equipment for scientific travel, photography, anthropology, biology and physiology, hygiene, electro-therapeutics and neurology, and pharmacology.

The Vienna General Hospital.—Hofrath Dr. Hoffmann having retired from the post of Director of the General Hospital, Vienna, Professor Böhm has been appointed to this most important office, the said hospital being, we believe, the largest hospital in the world.

The charges recently made against this hospital in the Austrian Parliament were not sustained upon investigation.

Opposition of the Russian Government to the Study of Medicine by Women.—Not content with closing the academies for women at St. Petersburg, Moscow, and Kiew, the Russian Government has increased the tax for passports to students going to study in Switzerland (which offers excellent advantages to women), from ten to twelve roubles monthly, a sum which will make it impossible for many poor women to study medicine.

Vacation Classes at Vienna and Berlin.—The programme of medical courses of instruction at Vienna during the months of August and September has been issued. The number of such classes is now very large, and of their convenience for foreigners there can be no question. Most of them are complete within a month, meetings being held daily. Amongst them may be noted those on morbid anatomy (Dr. Adolf Zemann); pathological histology (Dr. Kolisko); bacteriology (Prof. Weichselbaum and Prof. von Frisch); medical diagnosis (Drs. von Frisch and E. Neusser, Drs. Bamberger and Lorenz, Drs. von Langer and Heitler, and Dr. Drozda); diseases of the organs of circulation (Dr. Bettelheim); diagnosis of brain and spinal cord diseases (Dr. Benedikt); and the pathology and treatment of nervous diseases (Prof. Rosenthal). There are also courses on forensic medicine, urinology, practical and operative surgery, ophthalmology (no fewer than seven different courses), gynecology, laryngoscopy, otology, dermatology (Prof. Kaposi and Dr. Riehl), syphilis, etc. An even more complete series of post-graduate classes of a like kind will be held in Berlin, from the 26th of September to the end of October, of which the announcement will be found in the *Berliner kliniker Wochenschrift* of June 27, p. 483.—*Lancet*, July 2, 1887.

A Parallel to Guiteau's Case.—M. Deny, one of the physicians to the Bicêtre, while making his rounds on June 17th, was attacked by an insane patient, who attempted to stab him in the abdomen with a sharpened

table-knife. The attack was fortunately frustrated. The same patient, in November, 1885, demanded from de Freycinet the payment by the Government of a considerable sum in recompense for the death of a child in Panama. He was examined and pronounced insane, his malady being characterized by ideas of grandeur, persecution, refusal of a just claim, and revenge, similar to those which led Guiteau to assault the President. When questioned, he avowed his determination to repeat the assault.—*Le Progrès Médical*, June 25, 1887.

Paralysis from Earthquake Electricity.—The Paris correspondent of the *Lancet* of June 11, 1887, writes as follows regarding a case resulting from the earthquake at Nice: "Dr. Onimus relates a case of nervous disturbance (Société de Biologie) of unusual interest. The subject was a strong, vigorous man, not easily impressionable, and incapable of deceit. He was at the time in charge of a fort. There were, it will be remembered, three distinct commotions, the strongest at six, another soon after, and a third, much weaker, at nine o'clock. The patient was sending a telegraphic message, and, happening to have two points in contact with the metal of the transmitting apparatus, felt a violent shock, and lost consciousness for ten minutes. During the remainder of the day he felt giddy and weak, but has no recollection of *phosphènes* at the occurrence of the shock. Two months later he complained of constant headache, and fibrillary contractions in the muscles of the limbs. The right arm was paretic, and the extreme weakness was confirmed by the dynamometer. Besides tremor and painful localizations along the median nerve, there was a considerable decrease of sensibility, the finger-tips scarcely recognizing a separation of twelve millimetres between the points of the compass. The paralysis of the face was on the left side, and consisted of ptosis, accompanied by blepharospasm. This crossed or alternate paralysis is what is seen constantly as a result of a powerful electric shock; but in this case the symptoms have been more serious and persistent. At the present time there is little if any improvement."

The Sweating Sickness in France.—There can be no doubt that the epidemic which has broken out in the Departments of Vienne, Haute-Vienne, and Indre, is an idiopathic miliary fever, the historical sweating-sickness. Dr. Daremberg has written an important letter on the subject to the *Journal des Débats* (June 25th). He has accompanied Drs. Chantemesse and Thoinot to Montmorillon, the centre of a district where more than 4000 cases, with 300 deaths, have occurred. The disease is characterized by a profuse sweat, and an eruption of small miliary vesicles. M. Littré believed that the disease was known to Galen, but the first authentic epidemic was the *Sudor Anglicus*, "Sweating-sickness," or *Suette Anglaise* of 1485, well known to historians. It was very fatal, according to Delaune, in London in that year, and Stow records that in 1499 it raged in the metropolis, so that Henry VII. and his court removed to Calais. In 1506 and 1507 the epidemic was terrible; Oxford was depopulated. In 1529 an epidemic ravaged Europe. In the seventeenth century it appeared in France and Germany; the mortality was less, but the miliary rash appeared in every case, whilst in the first epidemic it was rare. But Dr. Daremberg shows that the patients in the English epidemic of 1485 mostly died within a few hours of the appearance of the first sweat, before the rash had time to develop. Precisely the same thing has occurred this year, several patients having died in two or three hours without any trace of rash. In the same district very mild cases have occurred, the patients being confined to their beds for a couple of days and then able to work. As in an epidemic in Poitou in 1843, and another in the Aude in 1864, the epidemic was preceded by many cases of eruptive diseases mistaken for measles. The troops of the garrison of Poitiers suffered severely from this "scarlatiniform measles." The first case of sweating-sickness this year occurred on April 16th in the commune of Saulgé. In the town of Montmorillon (5128 inhabitants), 47 persons died of the epidemic between May 3d and June 19th. At Moulismes (940 inhabitants), there have been 45 cases and 16 deaths—the mayor, two other officials, and the wife of one of those magnates dying within a few hours. At St. Remy (893 inhabitants), there have been over 50 cases. In five or six communes, hardly a dozen people have escaped infection. The more recent cases have been mild. Dr. Daremberg found that the patients had little pyrexia, dyspnœa, or palpitations. They had profuse perspiration and an eruption, in some cases resembling measles, in others scarlatina, but always vesicular. The vesicles on the tongue formed ulcers. The patients felt no prostration and little loss of appetite. The earlier cases were of quite a different type. The patients showed the worst symptoms of malignant fever, profound depression, violent delirium, syncope, epistaxis, and intestinal hemorrhage. A great number of intermediate forms proved the identity of the very bad and the very mild cases. The alleged anomalous forms of measles seen in the same district are also forms of sweating-sickness. Drs. Brouardel, Chantemesse, Descout, and Thoinot have inspected the infected communes, and enforced, through the sanitary authorities, disinfection by means of sulphurous and carbolic acid. The peasants at first objected to these measures, and dreaded the damage which the acids might inflict on their furniture. They preferred the common French placebo, infusion of lime-tree blossoms, to quinine; and when stricken, they closed their windows and piled eiderdown quilting and blankets over their bodies, notwithstanding the intense heat of the weather and the fetor developed by the practice. Dr. Daremberg believes that the disease is infectious. Another medical correspondent, signing himself "Dr. G. D.," writes to the *Journal des Débats*, noting the fetid perspirations, the measles-like variety, and the extreme infectiousness of the disease. Some recent cases of so-called measles at Bourges appear to him to be sweating-sickness. "Dr. G. D." reports that the activity of the sanitary authorities is rapidly extinguishing the epidemic. We trust that it may only reach this country in the form of abstract discussion at the Epidemiological Society or elsewhere; fortunately it is very unlikely to cross the Channel, or even to reach Paris.—*British Medical Journal*, July 2, 1887.

From *Le Progrès Médical* of July 2, 1887, we learn that this disease is decreasing, and that physicians have been sent from the Paris hospitals into the infected districts.

Smallpox Hospitals.—One of the important subjects connected with sanitary administration is the location of smallpox hospitals in towns and cities. For the sake of the patients who are removed to these institutions, it is very essential that the distance which they are transported should be as little as possible; while, on the other hand, for the protection of the public, such hospitals should be situated so far from the inhabited portions of the towns as not to be a factor in the spread of the disease. Mr. W. H. Power, a medical inspector of the English Local Government Board, has given especial attention to this subject, and the evidence accumulated by him seems to indicate that a smallpox hospital in a town causes a greater incidence of smallpox in the vicinity. Within an area contained by a circle described three-quarters of a mile from the West Ham smallpox hospital, the death-rate from this disease was never less than twice, and sometimes even ten times, greater than the general rate; the number of cases showing a progressive decrease as the distance from the hospital increased. Mr. Power has studied the theories that the wind was a factor in this increase of cases near the hospital, and that the nurses and others were the channel of communication, but has found them inadequate to explain all the facts.—*Science*, May 20, 1887.

A Popular Remedy for Ivy Poisoning.—A writer in *Popular Science News* for June, 1887, says as follows:

I have always been extremely susceptible to the poison of poison ivy and oak so as to give me great annoyance, unless it is immediately checked on its first appearance. This common washing-soda accomplishes for me, if properly applied. I make the application by saturating a slice of loaf-bread with water, then cover one surface with soda, and apply to the eruption, the soda next the flesh. When the bread is dried by the animal heat, I drop water on the outer side so as to keep it thoroughly moistened, and dissolve the soda crystals in contact with the skin. This, you will perceive, is merely a bread poultice; the bread being a vehicle through whose moisture the soda reaches the humor. I find that the washing or bathing with soda water, even continuously, will not suffice with me. My skin requires the heat and moisture of the bread in order for the soda to act on and neutralize the poison. I rarely have need to retain this soda poultice for more than thirty minutes on any affected part. No pain ensues. Formerly I suffered often for weeks, as the poison would spread all over my body. Now thirty minutes measure the duration of its exhibition.

French Laws and Usage Regarding the Insane.—The case of Baron Seillière, who spent some time in the United States, has attracted considerable attention to the French laws regarding the adjudgment and incarceration of the insane. The Paris correspondent of the *Lancet* writes as follows, under date of July 2d:

"A well known member of society, Baron Seillière, has been somewhat hurriedly transferred to the *maison de santé* (as lunatic asylums are more discreetly termed in France) of the celebrated Dr. Falret. A sharp controversy has arisen in the press in consequence of this sequestration, and many of the writers are loud in denouncing the state of the law on the subject, and in abusing all those concerned in administering it. Baron Seillière bitterly complains of the whole proceedings. He declares his family laid a plot to entrap him. 'I may have been eccentric, I may have spent money freely, but many a man in my position has done the same. If I have made bad speculations, I have also made successful ones, and as I neither think, speak, nor write as a madman, I consider myself the victim of an unjustifiable attack.' On the other hand, Professor Charcot, who has interviewed the patient on behalf of his family, declares him to be insane. As I have already hinted, the comments of the press upon mental physicians and their doings are far from complimentary; and although there is no doubt a great deal of exaggeration some of the statements made are not entirely devoid of foundation. It is an aphorism amongst French alienists that any person in Paris presenting signs of excitement should, in the absence of a satisfactory explanation, be suspected of general paralysis. Not only are the Parisians privileged in counting in their number the highest percentage and the most eminent sufferers from the *maladie du siècle*, but it is said also that Paris has a special attractive influence for general paralytics as a class. Given, then, a person in a state of excitement, he would, if he had the misfortune to be examined by an expert, run a very fair chance of being sent to an asylum. Once there, any explosion of indignation would be taken as additional evidence of the necessity of the measure, and if the victim were not calmed by being cut off from the world, and soothed by the application of a *camisole de force*, no sane alienist would entertain any further doubt as to the nature of his case. The lawyers maintain, and this is the practical outcome of the whole matter, that the *affaire Seillière* shows the urgent necessity of a change in the present law concerning the insane. As it is, they say, once a man has fallen into the hands of the alienists, the machinery of the law is powerless to help him. He may, at the discretion of his keepers, be separated from the whole world, and even subjected to solitary confinement. Should those interested in his welfare think they have cause to complain, they are hardly able to obtain an independent examination. Those who have the patient in charge can refuse access to all except the expert commissioned by the courts in each particular instance; but as in lunacy practice the expert of to-day is often the alienist of to-morrow, the patient may benefit but little by such a consultation."

A Movable Sheet for the Sick.—Dr. Roche describes the following device in the *Popular Science News* for May, 1887: I have found the following a valuable arrangement for the sick needing change of position, or, as is often the case, a weak nurse to perform the labor, or in cases of surgery, where the safe and easy movement of the patient is necessary:

Fasten smoothly to the mattress, with strong safety-pins, a rubber blanket or piece of enamelled cloth, rubber or enamel side up. Upon this, place a similar rubber or enamelled cloth, if possible somewhat wider, so as *always* to keep the under one covered. Cover with a sheet, and make up the bed as usual. Between the rubber or enamelled surfaces sprinkle soapstone powder, kept by all shoedealers, or glove-powder; or,

if nothing better can be had, the common graphite, known as stove-polish, will do. Now, by grasping the edge of the under sheet and upper enamelled cloth at the same time, it will be found easy to *roll over* or move the heaviest person with slight effort, and little pain or straining, either to nurse or patient.

If the device prove too slippery when not wanted, a few strong pins fastening it to the bedding beneath will prove sufficient to prevent it.

A CLERGYMAN'S VIEW OF THE FAITH AND MIND CURES.—The faith cure and the mind cure are at the present time attracting a great deal of popular attention; and almost daily cures are announced, under this treatment, of persons who have, under all other methods, remained chronic invalids. It is not to be wondered at, that physicians denounce this treatment as charlatanism, but it was hardly to be expected that one of the most potent arguments against the validity of its claims should come from one of the clergy. In a recent sermon on this subject, Rev. E. C. Ray, of Hyde Park, Ill., says, "Apparent cures are often followed by a relapse, temporary improvement by permanent decline. From reported cases of cure we must deduct many of unreported relapse: it is not in human nature, when a wonderful cure has been published abroad, to follow it up with an account of the relapse coming afterward. Mistaken diagnosis accounts for many supposed cures. Physicians often, patients more often, mistake the nature of a disease. Temporary swellings are called malignant tumors or cancers (thus cancer doctors get their reputations); hysteria simulates almost every other disease, so as to deceive even the most elect of doctors; dyspepsia produces symptoms of heart disease or other deadly illness. There can be no question that a large proportion of faith cures and mind cures, and a considerable proportion of cases under ordinary medical treatment, are cases of mistaken diagnosis, the disease being less serious in its nature than was supposed. Mistaken prognosis accounts for many cases; mistake as to what would be the outcome of the disease if no curative methods were employed. It is a truth seldom recognized by patients, though well known to physicians, that in most cases not hopelessly fatal from the start, there is from the start a strong tendency toward recovery. Dr. Austin Flint, Sr., than whom perhaps no abler physician has lived in this land, always urged upon his students the truth that not drugs, but *vis medicatrix naturæ*, the healing power of nature, is the means of recovery. The wise physician and nurse seldom attempt more than gently and humbly to assist Nature in her curative processes. Let me add the statement of a conviction derived from some years of such close scrutiny of medical practice of various schools as a pastor has good opportunity for—a conviction agreed to, I think, by most physicians. The benefit of medicine is often not its direct action upon the disease or upon the body, but its action upon the mind, and through that upon the nervous system and the whole body, stimulating faith, hope, expectation of recovery, good cheer, which are probably nature's mightiest remedial assistants."—*Science*, May 27, 1887.

ELECTRIC ENDOSCOPES.—At the late German Congress of Surgeons, NITZE, of Berlin, and BRENNER, of Vienna, exhibited electric endoscopes which had been proved successful in the examination of the interior of the bladder.

MAREY'S ODOGRAPH.—MAREY, of Paris, has invented an apparatus for recording and estimating the speed of a man's walk, and the course taken by a man or group of men. The apparatus is not yet perfected, but it will be applied to the study of many physiological problems connected with the conservation of human energy in which accurate observation is desired.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JULY 12 TO JULY 18, 1887.

MATTHEWS, W., *Captain and Assistant Surgeon.*—Assigned as member of Army Retiring Board, at Washington, D. C.—*S. O. 159*, par. 2, *A. G. O.*, July 12, 1887

SKINNER, J. O., *Captain and Assistant Surgeon.*—Relieved from duty.—*S. O. 159*, par. 2, *A. G. O.*, July 12, 1887.

MAUS, L. M., *Captain and Assistant Surgeon.*—Ordered to accompany the Eleventh Infantry in changing station from the Department of Dakota to the Department of the East.—*S. O. 158, A. G. O.*, July 11, 1887.

PERLEY, H. O., *Captain and Assistant Surgeon.*—Ordered to accompany the Eleventh Infantry in changing station from the Department of Dakota to the Department of the East.—*S. O 158, A. G. O.*, July 11, 1887.

GARDNER, E. F., *Captain and Assistant Surgeon.*—Ordered to accompany the Twelfth Infantry from Madison Barracks to Duluth, and to return with the Eleventh Infantry.—*S. O. 143, Division of the Atlantic*, July 13, 1887.

EBERT, R. G., *Captain and Assistant Surgeon.*—Will, in changing station from Fort Hamilton, New York Harbor, N. Y., to Fort Custer, Montana Territory, accompany the Twelfth Infantry from the East to the Department of Dakota.—*S. O. 159. A. G. O.*, July 12, 1887.

WALKER, F. V., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for four months.—*S. O. 160, A. G. O.*, July 13, 1887.

CABELL, JULIAN M., *First Lieutenant and Assistant Surgeon.*—Ordered for duty as medical officer at Department Rifle Camp, near Bellevue, Nebraska, August 1st, next.—*S. O. 66, Department of the Platte*, July 8, 1887.

A board of medical officers, to consist of *Major and Surgeon* J. S. BILLINGS, *Captain and Assistant Surgeon* W. MATTHEWS, and *Captain and Assistant Surgeon* F. C. AINSWORTH, is constituted to meet in this city, for the examination of a candidate for admission to the Medical Corps of the Army.—*S. O. 157, A. G. O.*, July 8, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JULY 16, 1887.

LONG, W. H., *Surgeon.*—Granted leave of absence for thirty days, on account of sickness, July 12, 1887.

AUSTIN, H. W., *Surgeon.*—Granted leave of absence for thirty days, July 16, 1887.

WATKINS, R. B., *Assistant Surgeon.*—Relieved from duty at Marine Hospital, Detroit, Michigan; ordered to assume charge of service at Evansville, Indiana, July 9, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

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ORIGINAL ARTICLES.

LOCAL TREATMENT OF DISEASES OF THE BRONCHIAL TUBES AND LUNGS.[1]

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THE object of this paper is to describe some of the methods which I have employed in the local treatment of chronic bronchitis, chronic interstitial pneumonia with bronchiectasis, and phthisis pulmonalis, and to give the results which have been obtained.

CHRONIC BRONCHITIS.

This disease has been treated by three principal methods: First, by the direct introduction of coarse spray into the air-passages by means of Sass' spray apparatus; second, by the inhaling apparatus of Dr. George A. Evans; and third, by the pneumatic cabinet.

In the use of the direct spray, the principal indications watched for have been the amount and violence of the cough, the amount and character of the expectoration, and the presence or absence of emphysema and asthma. When the cough is severe and spasmodic, the treatment is usually begun by the use of sedative substances, particularly carbolic acid and the fluid extract of hyoscyamus. In using the carbolic acid our custom is first to spray the air-passages with a solution equivalent to that of Dr. Dobell, the formula is:

R.—Acid. carbol. cryst. . . .	♏xx.
Sodii bibor.	ʒij.
Sodii phosph.	ʒij.
Glycerini	℥i.
Aquæ	ʒvj.—M.

After first cleansing the nasal passages by the use of this spray, the patient is directed to draw out the tongue and take a deep inspiration, during which the spray is thrown into the pharynx, or directly into the larynx by a bent tube, during two or three successive inhalations. A fifty per cent. solution of carbolic acid in glycerine is then added to the fluid in the flask until the point of tolerance of the patient is reached, and, when as strong a solution as can be borne is obtained, the air-passages are sprayed with this five or six times, the patient always inhaling as deeply as possible. If the necessity for it exists, the nasal catarrh is then treated by such application as seems to be indicated. This method of treatment is repeated every day or every other day, as often as is convenient for the patient, no home treatment being employed, though usually some remedies in the way of tonics or alteratives are used internally at the same time.

By this thorough cleansing and disinfecting of the air-passages, combined with the anæsthetic effect of the carbolic acid, the irritation is usually very markedly allayed, so that for twenty-four hours, at least, after the treatment, the cough is diminished in frequency and violence. The method is not always efficacious. It is sometimes necessary to rely, to a great extent, upon sedative drugs, particularly at the ontset of the treatment, where the spasmodic character is very well marked.

If the treatment by carbolic acid is inefficient, or if the results come about slowly, fluid extract of hyoscyamus may be either added to or substituted for it, the passages being first cleansed and disinfected by means of the alkaline and carbolic acid solution. A spray of hyoscyamus of the strength of about half a drachm to the ounce is introduced, the application being repeated half a dozen times at each sitting. This solution is particularly efficacious where a tendency to asthma exists.

When there is a very copious secretion of muco-purulent matter, stronger astringents have to be employed. The principal of these are tannic acid, the iron salts, and the fluid extract of pinus canadensis. For the use of tannic acid a standard solution is used as the basis.

R.—Acidi carbol. cryst. . . .	♏xv.
Glyceriti tan.	ʒijss.
Aquæ menth. pip. . . .	ʒvss.—M.

After the preliminary step of cleansing and disinfecting, this solution is sprayed directly into the air-passages. When the patient has become accustomed to its effects by one or two inhalations, glycerite of tannin is added to it until it is as thick as it can be and be capable of producing a spray.[1] This spray is then inhaled five or six times. Its effects are often very salutary, the amount of expectoration decreasing perceptibly after each sitting, though the treatment is immediately followed by an increased expectoration, which lasts for from one to three or four hours.

Of the iron salts, I have most frequently employed the chloride, using a mixture of equal parts of the tincture of chloride of iron and glycerine. This is diluted to about twenty-five per cent. and used in the same way as the tannin. Where great relaxation

[1] Read at the meeting of the American Climatological Society, Baltimore, May 31, 1887.

[1] The addition of only a very small amount of water is necessary to render the glycerite of tannin sufficiently fluid to produce a spray with a pressure of forty to fifty pounds. Five or six drops of water to a fluid-drachm give a good spray, and ten drops to a drachm make it capable of being sprayed at quite a low pressure—*i. e.*, fifteen or twenty pounds.

and an anæmic condition of the mucous membrane exist, it acts better than the tannin solution. A solution of iron alum of the strength of fifteen grains to the ounce may also be used. Pinus canadensis is of service in about the same class of cases as are benefited by tannin, though it has rather more sedative effect than the latter. The preparation usually employed is a mixture of equal parts of Kennedy's white fluid extract and glycerine. The liquid is very heavy and can only be sprayed with a high pressure. To use any of these substances most effectually, it is necessary to have a pressure of from forty to fifty pounds to the square inch. This is obtained by the use of the Crown Gas Engine, manufactured by the National Meter Co., 252 Broadway, New York.

A large tank is connected with the gas engine, which has, by a special contrivance, been converted from a water into an air pump, and the compressed air from the larger reservoir is drawn off into an ordinary office receiver at the convenience of the operator. I usually have a pressure of from fifty to sixty pounds to the square inch in the larger reservoir, and, by means of stopcocks, can regulate the pressure in the small office receiver to which the gas is attached, according to the requirements of the case under treatment. Where the nasal passages are very much inflamed and tender, and particularly where there is stenosis, which increases the friction to a high degree, it is better not to go beyond thirty pounds at the beginning of the treatment; but when the swelling of the turbinated bodies and septum has been sufficiently reduced to admit of the free access of air or spray, the passages can be much more thoroughly cleansed and disinfected if we use a pressure of from forty to fifty pounds.

I think it possible that one cause of the avowed failure of certain gentlemen who have recently written upon this subject, to treat successfully nasal catarrhs with the spray, is to be found in the low pressure which they have employed in the introduction of the spray into the nostrils. The degree of pressure required in a given case can be determined in two ways. In the first place, by the amount of resistance which the spray encounters in passing through the nose. This is quickly shown by the regurgitation of the fluid through the nostril into which it is introduced, and its failure to pass through and out at the opposite side. The second are the sensations of the patient, though the latter generally depend upon the former.

Where the nostrils are sufficiently patulous to admit the spray readily, so that there is little tendency to friction or the development of high pressure in particular localities of the nose, the pain is usually very slight, and a high pressure may be advantageously employed. But where the stenosis is well marked, and the friction consequently very great, there is a tendency for the fluid to accumulate or to be forced violently into the chamber of the antrum, and the pain is sometimes very severe. Under such circumstances the preliminary spraying must be done with a very moderate pressure, and if, even then, the spray does not pass readily through the nostrils, it is better to dilate them by the introduction of cocaine, when no further difficulty of the kind will be experienced. I suspect, however, that the cocaine may to some extent interfere with the therapeutic action of the medicinal agents employed, though it does not, of course, lessen the value of the disinfectants.

In the spraying of the larynx and trachea it is always better to use a very high pressure, and the reasons for this are twofold. In the first place, with the high pressure a very large volume of fluid is introduced in a short space of time, so that in a few seconds an ordinary flask, such as is used in these manipulations, may have its contents half exhausted. And in the second place, the forcible impact against the walls of the mouth and pharynx nebulizes it to such an extent that it is more widely diffused in the respiratory passages. Occasionally a drop of the fluid will form upon the end of the spray tube and fall into the trachea, producing a violent fit of coughing; but, with the high pressure, the time occupied in each introduction of the spray may be so shortened that there is very little danger of this accident.

The advantages to be obtained by this method of treatment over the others to be described later on, are that it occupies very much less time, in consequence of the far larger amount of fluid that can be sprayed into the throat during one or two inhalations, and its better cleansing properties. The forcible introduction of the spray directly into the larynx and trachea gives a much more thorough washing than can be accomplished by the slower methods to be described hereafter.

The treatment of chronic bronchitis by means of the pneumatic cabinet has also been very successful in my hands, as it has in the hands of other gentlemen who have reported their experience with this instrument. The patient is confined in the cabinet under a negative pressure of from two-tenths to five-tenths of an inch. The sitting usually lasts ten minutes, though it may, after the patient has become accustomed to its use, be prolonged to fifteen or twenty minutes. The pneumatic differentiation is accompanied by the inhalation of the spray, for which purpose we employ the "Evans inhaler." The solutions most frequently employed by me are, a twenty per cent. solution of carbolic acid, with borax and glycerine, a solution of the fluid extract of pine needles with iodine, and a combination or mixture of the two solutions in equal parts. When asthmatic breathing is present, the solution of hyoscyamus already referred to is of great value. If much emphysema exists, the cabinet is not indicated. I have never seen any benefit derived from its use in these cases, though I have tried both rarefaction and condensation. The inhalation of the hyoscyamus may relieve the asthmatic breathing, but this may be accomplished just as readily outside the cabinet as in it. In one case a sitting of five minutes in the cabinet developed in a very emphysematous subject, whose breathing was fairly good when he entered the cabinet, a most terrible attack of asthma. The moral effect upon the patient was such that he could never be induced to reënter the box, and promptly transferred himself to the care

of another physician. I have frequently seen it increase the asthmatic breathing temporarily in such subjects, though in others it has produced temporary relief.

The cabinet is particularly valuable in very chronic and intractable cases where the relaxed vessels of the bronchial mucous membrane, though for a time contracted by the action of stimulant applications, soon resume their previous condition of dilatation. The cabinet undoubtedly acts in a twofold manner in these cases: First, as has been pointed out by Dr. Isaac Hull Platt, in a paper read before this Association at its last meeting, by the compression of the bronchial surfaces, and by some alterative effect due, probably, to a combination of the compression with the tonic action upon the vasomotor system of the lungs; secondly, by the action of the spray introduced during treatment. The disadvantage is that, with the spray introduced in this way through the long tube, we do not get the same cleansing effect as can be obtained in the direct method previously described. To obviate this difficulty, I have adopted the practice of first thoroughly cleansing the upper air-passages with the Sass' apparatus before the introduction of the patient into the cabinet.

The apparatus which Dr. George A. Evans introduced to the profession about two years ago has been used in a number of cases with generally satisfactory results. It consists of an ordinary "Wolff" bottle with a glass globe on top, into one side of which is introduced the point of an ordinary spray tube, while from the other emerges a tube for the collection of pulverized spray. It is a modification of the idea of Sales-Giron, and depends upon the principle that when a coarse spray is forcibly thrown against a surface it will be broken up into minute particles and form a fine nebula which will float in the atmosphere several minutes before being precipitated or evaporated. The grosser part of the spray remains in the globe and falls through a tube, back into the "Wolff" bottle, while the more finely nebulized portion is carried off through the tube of exit, from which it is inhaled by the patient. The mouth-piece consists of a hard rubber tube with an opening on one side, the tube held in the mouth of the patient, and the opening on its side covered by his forefinger during inspiration; during expiration the finger is removed so as to allow the breath and spray to pass out through the side opening. The patient is instructed to make deep and slow inspirations, with the idea of securing, as far as possible, voluntary expansion of the chest. The solutions employed have been about the same as those used in the Sass' spray and the pneumatic cabinet.

The advantages claimed by Dr. Evans for his method are that, first, the patient is compelled to make voluntary efforts at deep inspiration during a space of time ranging from half an hour to an hour. By this means a valuable system of pulmonary gymnastics is put into operation. Second, the spray, very finely nebulized, and introduced directly into the air-passages in great volumes, has a better opportunity of diffusing itself in the residual air, and so reaching deeper into the lungs, than it could do under any other circumstances. Third, by means of the fine nebulization much stronger solutions may be employed than with the ordinary coarse spray. For instance, we have frequently employed a thirty per cent. solution of carbolic acid, a strength which could not be tolerated if applied to the air-passages in a liquid form, but which is easily inhaled by any one who is not extraordinarily sensitive.

The first few inhalations of these strong solutions occasion some cough, but this soon passes away, and the patient will continue to inhale for a long time without any further disturbance. At the termination of the sitting, the mouth, pharynx, and larynx, are pretty thoroughly anæsthetized, so that a feeling of numbness exists which lasts for an hour or more. Though the volume of spray as it issues from the tube seems very large, hanging as a cloud in the atmosphere of the room for a long time, still very little of the fluid is used up in its formation, and not enough is carried into the respiratory passages to have ever produced any symptoms of carbolic acid poisoning in the patients upon whom we have used it. As the precipitation of the coarse globules of spray has been thoroughly accomplished before it is introduced into the mouth, no fluid is deposited upon the mucous membranes, but they are simply subject to the mild action of the vapor or spray during the time of the sitting, and the spray itself is all thrown out through the mouth and nose. This method of treatment is particularly useful in cases in which the mucous membranes are extremely sensitive, in those accompanied by violent spasmodic cough, and where the disease is of very long standing, and a prolonged application of the medicinal agent is desirable. Its disadvantage is that, as the spray is introduced by no power except the inspiratory suction, it does not come with sufficient force to the mucous membranes to cleanse them thoroughly. But this objection has been overcome, as in the case of the cabinet patients, by thorough preliminary douching with the spray from the Sass' apparatus. By inhaling through the mouth, and exhaling through the nostrils, medication of the nasal as well as the lower air-passages is obtained.

To get the most satisfactory results by this method it is necessary to employ a high pressure of air. I commonly use a pressure of from fifty to sixty pounds to the square inch. But Dr. Evans, who has a more elaborate apparatus for the compression of air, employs a pressure of seventy to eighty pounds. The advantage consists in the greater volume of spray produced. The inspired air is loaded with it, and during the exhalation it pours from the nostrils in a cloud such as is seen to issue from the nostrils of a horse on a very cold and damp day. Where the membranes are very irritable, and the stronger solutions of carbolic acid are not well borne, a mixture of fluid extract of pine needles with iodine is very serviceable, and, as in the case of the Sass's apparatus, it is frequently combined with an equal portion of a ten or fifteen per cent. solution of carbolic acid. I have also used solutions of tannin with the Evans' inhaler, but the spray is exceedingly disagreeable to the patient, and apt to produce nausea. I have not employed any other astringents with this apparatus.

CHRONIC INTERSTITIAL PNEUMONIA AND BRONCHIECTASIS.

By the local treatment of this affection, three objects are to be accomplished. First, the healing of the bronchial catarrh; second, disinfection of the dilated bronchi: and, third, the restoration of the breathing capacity of such portions of the lung as are not hopelessly degenerated.

The first two objects are best accomplished by the use of the coarse spray or the Evans' inhaler. Each has its advantages, but so far as I am able to judge from my personal experience, the coarse spray is more serviceable.

The third object is to be accomplished through the use of the pneumatic cabinet, or some other apparatus for the inhalation of compressed air.

The method of treatment is first to wash thoroughly and disinfect the nasal and lower respiratory passages with a coarse spray from the Sass' tube. In the treatment of the lower air passages, a high pressure is necessary, so as to give a large volume of spray, and to project it with great force into the respiratory passages. This is at first productive of violent cough, which clears the secretions from the bronchial tubes, after which the spray is deeply inhaled, penetrating, probably, as low as by any other method. After this preliminary washing, the patient is put into the pneumatic cabinet and subjected to a negative pressure of two- or three-tenths of an inch for from fifteen to twenty minutes, while a mild spray is introduced through the tube in order to keep the mucous membrane of the pharynx moist during the treatment. The application of the pneumatic differential pressure in these cases should be made with the greatest care, as there is danger, if the pressure be too great, of producing emphysema of those portions of the diseased lung which are still accessible to air. For this reason, pressures over half an inch should not be employed. The sitting is made rather longer than in the case of chronic bronchitis, because of the necessity for the use of a lower pressure, and with low pressures, as with mild applications of medicinal agents, a more prolonged use is necessary than where the therapeutic agent is of greater power.

By this combined method of treatment, very brilliant results have been achieved in a number of cases which it is not necessary to detail. In some instances, where the cabinet has not been well borne, or where no manifest results were obtained after a fair trial, the Evans inhaler has been substituted for it with very gratifying results. In a few cases no benefit has resulted from any local treatment.

PHTHISIS PULMONALIS.

Aside from the effects of climate, there are no means by which we can obtain so much in the treatment of phthisis pulmonalis as by the use of agents, either physical or chemical, which act directly upon the respiratory organs.

In speaking of these local measures of treatment, I shall confine myself to the three which I have already discussed, namely, the coarse spray, the Evans' inhaler, and pneumatic cabinet. In the selection of a method of treatment for these cases, it is necessary to take account of all the conditions present, because that which benefits one case may be useless or positively injurious in another.

The best results are obtained either in the early stages, when the disease is in its incipient form and no extensive excavation exists, or where the process, though considerably further advanced, is still limited to a comparatively small portion of the lung. The use of sprays is beneficial only in so far as we desire to treat the coincident bronchitis, or where cavities connect with bronchi of the second or third order —*i. e.*, where they are near enough to the trachea to allow of the introduction of a sufficient quantity of the medicinal agent to disinfect them. In deep-seated cavities, and cheesy collections in the smaller bronchi and alveolar spaces, it is questionable whether a sufficient amount of any agent can be introduced through the trachea to have any therapeutic effect. But in large cavities with a free opening into the bronchial tubes, we may, as in the case of bronchiectasis, expect to obtain a certain amount of disinfection. Where naso-pharyngeal catarrhs exist, they should always be treated the same as in chronic bronchitis.

In incipient phthisis accompanied by very little bronchial catarrh, where the cough is accompanied by the expectoration of only a small amount of mucus, local treatment with sprays is of but little avail, and it is not worth our while to spend much time or worry the patient with it. These cases are best treated by the use of compressed air or the pneumatic cabinet, and in a very large proportion of them we may hope to render the disease latent. The action of the positively or relatively compressed air is to expand the lungs, to favor the expectoration of the contents of the smaller tubes and, possibly, of the alveoli, and to modify the intrathoracic circulation, as has been explained by Dr. Platt, and more recently, by Dr. Tiegel in an able article in the *New Yorker Medicinische Presse* for April, 1887.

The sittings should be frequent, every day, or every second day, and the pressure, at first slight, say two-tenths to three tenths of an inch of the barometer, should be gradually increased to one-half or even three quarters of an inch. Ten minutes is usually long enough for each sitting, though in some instances where it is well borne we have prolonged it to twenty and even twenty-five minutes. There is a great difference in the ability of patients to bear the differential pressure. Some experience no difficulty in inhaling under a negative pressure of one-half or three-quarters of an inch for fifteen or twenty minutes, and say that they feel much more benefit from the treatment than when it is lighter, but others soon become fatigued under the pressure of more than one-half an inch, and, on emerging from the cabinet, show signs of great exhaustion. I have met three or four cases in which the pneumatic treatment had to be abandoned because of the exhaustion and thoracic pain following its employment. A safe rule to adopt is never to make the pressure so high, or the sitting so long, that it is followed by a feeling of weariness or exhaustion. Used cautiously in this way it is, I believe, the very best method for the local treatment of incipient phthisis, or of

phthisis limited to a small portion of the apex of one or both lungs. When much bronchial catarrh exists in the earlier stages, the introduction of sprays is all important, and the method is precisely the same as for the treatment of chronic bronchitis. After this preliminary treatment, the pneumatic cabinet is used in the way already described.

So far as the introduction of sprays is concerned, the cabinet is not as useful as either of the other methods; for, while the initial expansion of the lung secured by the operation of compressed air is considerable, the subsequent exhalations do not coincide with it, so that, while the patient is in the cabinet and treated by the diminished pressure, though the chest is expanded and the amount of air actually contained in the lungs increased, this increase is rather in the residual than the tidal air. In some experiments conducted by Dr. Platt and myself, we found that a very robust man could exhale more air after a deep inspiration outside the cabinet than in it. While the expansion of the chest was increased by the action of the compressed air, the expiratory contraction was diminished. Of course, this applies only where the rarefaction is continued during the entire sitting, and would not hold good if the patient were made to inspire under diminished pressure and expire under the normal or increased pressure. But after a number of trials, I have not been able to use the cabinet in this way. Mr. Ketchum, the inventor of the cabinet, tells me that he can operate it in this manner, but possibly, from lack of skill in its manipulation, we have not succeeded in doing so.

With the Evans' inhaler in the treatment of the earlier stages of phthisis, my experience is not so great; as the other methods have proved so satisfactory that I do not generally resort to it. Where it has been used, however, the results have generally been very satisfactory. I believe that its efficacy depends, first upon the effects of the spray on the mucous membrane of the air passages, and, second, upon the salutary influence of the prolonged voluntary attempts at deep inspiration on the part of the patient. Under its use the cough and expectoration are markedly diminished, the patient acquires a gradual expansibility of the chest, and the dyspnœa on exertion is markedly diminished. As the natural result of this, the digestion and appetite improve, the sleep is better, and there is a diminution in fever and increase in weight.

The principles involved in the treatment of more advanced cases differ in no respect from those which we apply in the earlier stages, but certain precautions are to be observed, and less is to be expected in the way of a cure. It is possible, however, in many instances, greatly to improve the general health of the patient by diminishing the expectoration, regulating the pulmonary circulation, and increasing the breathing power. Whether anything can be done in the way of disinfection beyond what we have already alluded to, is very doubtful. It would seem, *a priori*, to be impossible to introduce enough of any antiseptic into the lungs to destroy the caseous foci, disinfect the infiltrated tissues in the neighborhood of the avenues of entrance, and leave enough to prevent a reformation of bacilli during the intervals between sittings. To my mind, the only way in which the progress of the tubercular invasion can be arrested is by so improving the nutrition of the tissues of the lung as to render them immune to the disease. We know that in the case of tuberculosis, as of other infectious and septic diseases, it is only a certain proportion of those who are exposed to the infection who contract the malady. Not every patient who is operated upon under circumstances which expose him to septic infection contracts pyæmia or septicæmia, and antiseptic surgery is for the benefit of those who are vulnerable. It need not be applied in every case if we had the means of knowing which were susceptible and which were not. So, in the case of tuberculosis, it is only those whose tissues are susceptible to the disease who contract it. And when the disease is present, in the absence of any means for thoroughly destroying the bacilli which already inhabit the lungs, our only resource is to endeavor to render the remainder of the pulmonary tissue invulnerable to their attacks.

In the treatment of advanced cases our first aim should be to cure the bronchitis, or so to diminish it as to lessen greatly the expectoration and the cough. This being done, the pneumatic treatment should be carefully applied, in order to get a better expansion and improved circulation, and an alteration of the action of the trophic nerves. The coarse spray, of course, accomplishes but one of these subjects, while the pneumatic cabinet and the Evans' inhaler act in both ways. If the cabinet is used, the patient should first be treated locally with the coarse spray, and, after thorough cleansing, the entire respiratory tract should be subjected to a moderate negative pressure, with the introduction of some unirritating spray.

After the employment of a number of different formulæ, it has seemed to me and my two colleagues, Dr. I. H. Platt and Dr. A. H. Buckmaster, that as good results were obtained by the use of a simple alkaline and carbolized solution, as with any of the others; though, in some instances where great irritability is present, a pine needle extract or the fluid extract of hyoscyamus has done better. We used, for some time, a solution of the bichloride of mercury in the strength of 1 to 1000, but it was not as pleasant to the patient as were the others mentioned, and there was no apparent difference in their therapeutic effects, or, if any, it was in favor of the other solutions. Many other formulæ have been used and advised by other observers, but the active principles of all are similar, and as those that we had used acted satisfactorily, it was not thought worth while to multiply them, as no opinion of any value could be formed in regard to the efficacy of any one agent, unless it were used for a long time and in a large number of cases.

Though the effects of the cabinet have been very satisfactory in cases which were not too far advanced, I think that, on the whole, we have been better pleased with the Evans inhaler. This apparatus has the advantage of being very easily employed. It does not alarm the patient, nor does it fatigue him as much as the cabinet. Of course, if the patient is

very ambitious, and exerts himself to inspire as deeply as possible for a long time, he may soon become exhausted. But when the cases are well advanced, and the patients greatly debilitated by disease, we do not at first urge them to make any great effort at expansion, but simply allow them to hold the tube in the mouth and breathe comfortably. As they become accustomed to its use, they inhale more deeply, the respiratory muscles are gradually strengthened by exercise, and they may finally become able to make a very effective use of the instrument. We have not employed the local treatment alone in any cases of advanced phthisis with extensive destruction of the lung, hectic fever, and copious night-sweats, but have always felt obliged to use other internal medication; so that it is impossible to say, in any given case, to what extent the improvement which has occurred is due to any one of the means employed, but it would appear that the use of these local measures is a valuable addition to our ordinary therapeutic resources.

It is particularly important, in using the pneumatic cabinet on this class of patients, not to make the pressure too high, as it appears from our observation that, where portions of the lung are contracting, no matter how strong a pressure is used, the contraction is not overcome, and any dilatation of the chest which is accomplished is at the expense of the non-infiltrated portions. In one instance the contraction of the lung, which was only apparent above the third rib on the left side at the beginning of treatment, extended, in spite of the daily application of the cabinet, so that, after the lapse of six weeks, it had progressed below the nipple and the anterior border had so far retracted that the cardiac pulsations could be felt over the entire precordial region, from the second intercostal space to the apex. Where this contraction goes on in spite of the judicious use of the cabinet, we may conclude that the instrument is doing no good, and it is as well to resort to other methods of treatment.

We have been somewhat surprised to see tabulated in some of the reports on the use of the pneumatic cabinet, cases of acute phthisis in which cures had been effected. It has been our experience that the more acute the disease, the more rapid its onset, the higher the fever, and the greater and more progressive the emaciation, the less can be accomplished, not only by this, but by any other method of treatment. Indeed, we are unable to report any case which we have diagnosticated as acute phthisis, on which local treatment has had any effect whatever. The patients are generally very weak, feverish, and irritable, and the application of these local measures simply exhausts them.

I would say, in closing, that the success of the local treatment is largely dependent upon the constitutional condition of the patient. Some, who appeared to have a very trifling amount of local disease have gone down very rapidly in spite of all that we could do. This has been particularly observed in alcoholic subjects. In one instance, that of a man twenty-eight years old, engaged in the retail liquor business, whose pulmonary difficulty was limited to the upper half of one upper lobe, and consisted largely of solidification without much apparent excavation, and where good results were confidently expected, treatment was found to be very exhausting, and, in spite of the greatest care, the patient rapidly declined. I have been told by Dr. Jacob Fuhs, through whose courtesy we had the opportunity of seeing him, that he subsequently developed a myelitis followed by paraplegia and rapid dissolution. On the other hand, there have been cases where the disease seemed very far advanced, and extended over a considerable portion of both lungs, which have done well from the start, sometimes very much to our surprise. The difference is undoubtedly dependent upon the constitutional resistance of the patient, and we desire particularly to call attention to this fact, in order to illustrate the principle that it is not well either to abandon any case because of its apparently desperate nature, or to base too hopeful a prognosis upon the slight extent of the local lesion.

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CYCLIC ALBUMINURIA.[1]

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THE interest and importance of this subject are the only excuse that can be offered for bringing such a hackneyed theme before the Academy. The presence or absence of albumen in the urine has been and probably always will be a matter of more or less grave importance to the practitioner, whether in examining for life insurance or in other practice. So-called "physiological albuminuria" had been suspected for some time by early investigators, but not until recently have decided views been expressed.

Sir William Gull,[2] in 1873, and Dr. Moxon,[3] in 1878, called attention to the frequent occurrence of albuminuria in youths and young persons. In these cases, however, it was temporary, passing off after a short time. Leube[4] and Fürbringer[5] made more extensive investigations which were of decided value. Leube examined the urine of 119 soldiers and found albumen in the morning urine of 5, and (after a march) in the afternoon urine of 19, and no albumen at night; about 4 per cent. had albuminous urine in the morning, and 12 per cent. in the afternoon. In no case was the amount of albumen over 0.1 per cent., and there was also no sign of blood, neither hæmaturia nor hæmoglobinuria, nor of casts, and only occasionally uric acid crystals present. The specific gravity was always between 1.013 and 1.022. Fürbringer examined the urine of 61 children and found albumen in 7 cases, or about 11 per cent. Others have found passing albuminuria after a cold bath or active muscular exercise. Mahomed[6] found in 77 persons who came up within 12 months for life insurance examination, albumen in 12 cases,

[1] Read before the Baltimore Academy of Medicine, May 31, 1887.
[2] Sir William Gull: Trans. Roy. Medico-Chirurg. Soc., 1874.
[3] Moxon: Guy's Hospital Reports, 1878.
[4] Leube: Virch. Archiv, 1878.
[5] Fürbringer: Zeitschrift f. klin. Med., 1879, p. 340.
[6] Mahomed: Guy's Hospital Reports, 1884.

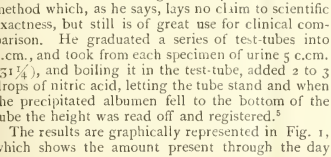
or 15.5 per cent. These cases were only examined once and in the forenoon. He feels confident that we can have albuminuria with healthy kidneys, although he lays, and with justice too, great stress upon the necessity of examining the condition of the vascular system.

Pavy[1] was probably the first to describe the cyclic character of this albuminuria. He noticed that the condition of one day was repeated with more or less exactness the next. V. Noorden[2] and Bull,[3] of Christiania, also report similar cases.

In Leyden's clinic in Berlin, a young man, a student, was found to have albumen in his urine. An assistant, Dr. Klemperer,[4] suspecting cyclic albuminuria, examined the urine day after day, taking specimens from eight different hours in the day. The patient passed his water at 6.30, 7.30, 8.30, and 11 A.M., and 2, 6, 10, and 11 P.M., taking care to empty the bladder entirely each time. The examination extended over a period of three months, and as the urine was tested under different circumstances and as the student was a very willing subject, the results are interesting. Klemperer followed a method which, as he says, lays no claim to scientific exactness, but still is of great use for clinical comparison. He graduated a series of test-tubes into c.cm., and took from each specimen of urine 5 c.cm. ($5\frac{1}{4}$), and boiling it in the test-tube, added 2 to 3 drops of nitric acid, letting the tube stand and when the precipitated albumen fell to the bottom of the tube the height was read off and registered.[5]

The results are graphically represented in Fig. 1, which shows the amount present through the day

FIG. 1.



when the student followed his daily avocation in the ordinary routine of lectures, meals, exercise. He generally awoke at 6, arose at 7.30 and drank a cup of coffee, and at 11 took breakfast. In the morning he was either at home or attending lectures. At 1 P.M. he took dinner, at 4 he drank coffee and at 8.30 supper. He generally took a walk between 4 and 6 P.M., and usually remained at home in the evening. The urine which he passed on waking was free from albumen; that passed on dressing and undressing (7 30 A.M. and 11 P.M.) contained the most. From 11 A.M. to 6 P.M. he passed the least. There seems to be a fall in the morning and a rise in the evening.

When he remained in bed one hour longer than usual the urine passed at 7.30 A.M. was free from albumen, while that passed at 8.30 contained the most. On one occasion he remained in bed until noon, and then the morning urine was entirely free from albumen, and even at 2 P.M. there was only a trace, showing the influence of rest on the albumen.

Again, after he had spent the morning working as usual, he went to bed at 12 noon, and, except for a trace of albumen observed at 6 P.M., the afternoon urine was entirely free. At several different times he remained in bed the whole day, and in every instance the urine was found to be entirely free from albumen. Finally, he spent one entire day in working especially industriously at his books, not going out to lectures nor for exercise, and the albumen was present in his urine all day with a maximum at 11 P.M., thus showing the influence of mental exercise.

Nothing else pathological was found in the urine, which was in every case clear, transparent, acid, with a specific gravity of 1.005 to 1.020. The daily amount passed was 1500 to 1800 c.cm. (40 to 50 ounces). All sediment, even oxalate of lime, was absent. No sugar was present. He spent the summer in Switzerland, and the next winter returned to Berlin, having gained in weight. Examination of the urine showed a less amount of albumen which, however, still retained its cyclic manner of appearance.

While under observation the patient varied his diet, some days taking milk alone and again only meat, and all without any influence upon the amount of albumen. As an invariable consequence of resting the urine was always free from albumen.

The following case recently came under my care. F. H., aged thirty two, stout, little color, married. He does not complain of being unwell, although his position as druggist keeps him very much confined, from 7 A.M. to 12 midnight. He gave no history of gout, rheumatism, nephritis, or syphilis, but had had intermittent fever. Examination of the heart and radial pulse showed nothing abnormal. He saw very well. He applied about eighteen months to two years ago for admittance to a life insurance company, and was much surprised to find that he was rejected on account of albumen in his urine. He was told he would die in a few months, and was naturally much frightened, although at the time he felt very well and had a good appetite. He consulted many physicians, and took different things, changing his diet with each physician, and examining his urine himself very carefully, as he had abundant opportunity of doing. He noticed, as time went on, no great change; now there would be less albumen, now more, and occasionally none. In one of these happy, non-albuminuric intervals he again applied for life insurance, but unfortunately for him, by the time the examiner reached him albumen had again appeared in his urine.

He gradually became accustomed to his position,

[1] Pavy: Lancet, 1885, p. 706.
[2] V. Noorden: Deutsches Archiv f. klin. Med., Bd. 38.
[3] Bull: Berliner klin. Wochenschrift, 1886, No. 42.
[4] Klemperer: Archiv f. klin. Med., Bd. xii.
[5] To estimate approximately the amount of albumen present, we may say that when 2 to 3 per cent. of albumen is present, the whole fluid is coagulated; 1 per cent., the coagulum reaches one half way up; 0.5 per cent., one-third way up; 0.1 per cent., one-tenth way up; 0.05 per cent., barely fills the curved part of the test-tube; when less than 0.01 per cent., there is a slight cloudiness but no precipitate.

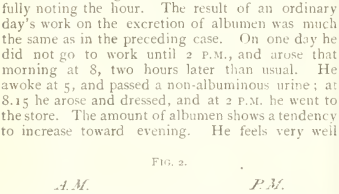
and now seems to be thriving under it, having gained in weight since last year. I have examined his urine at different times and under different circumstances in the past few months, and have rarely failed to find albumen. For the sake of comparison I have followed the method employed by Klemperer, not, however, neglecting to test the urine with other reagents.

The amount passed per day was about thirty to forty ounces in cold weather; it was acid at every test, and the specific gravity (taken at every test) ranged between 1.019 and 1.031. Examination of the sediment microscopically showed only oxalate of lime and uric acid crystals, and no casts. He also informed me that none of his attending physicians had ever found casts. The specific gravity reached 1.030 and 1.031 on a few occasions, and then the albumen was most abundant.

In using the layer test of Heller I was occasionally struck with the intense color of the ring of urates above the acid, and have since had my attention called to a statement of Dr. Sedgwick Saunders, who, in making tests for Ralfe,[1] noticed that on the days when the albumen was most abundant, the specific gravity was above the normal, whilst the ring of urates which formed just above the cold nitric acid on which the urine was floated, when the albumen was most abundant, was always intensely colored by the oxidized pigment of the urine.

Unfortunately I was unable to get specimens of urine at stated hours from my patient, as Dr. Klemperer did from his, still I found him ever ready to assist me in saving the urine in bottles, and in carefully noting the hour. The result of an ordinary day's work on the excretion of albumen was much the same as in the preceding case. On one day he did not go to work until 2 P.M., and arose that morning at 8, two hours later than usual. He awoke at 5, and passed a non-albuminous urine; at 8.15 he arose and dressed, and at 2 P.M. he went to the store. The amount of albumen shows a tendency to increase toward evening. He feels very well

FIG. 2.



Shows the average daily amount of albumen passed for each hour.

and cheerful, and his only desire is to have his life insured.

Without going into the pathology of this disease, it is evident that rest and work play an important part in its etiology. The most generally accepted theory is that some change in the epithelium covering the glomerular vessels allows the albumen to pass through into the urine—a condition which the normal epithelium prevents. An extended and careful observation can alone give a decided diagnosis. I have used the heat test, the nitric acid test, nitric acid and heat, picric acid, and the nitric-magnesian test of Roberts, and I think that no one should be satisfied with a single test.

As for the prognosis, Leube, Fürbringer, Moxon, and Mahomed would no doubt be in favor of insuring persons with cyclic albuminuria, while Johnson,[1] and others, hesitate, and seem to think that such cases probably end in some form of nephritis. Dr. Munn,[2] as Medical Director of the United States Life Insurance Company of New York, finding that nearly ten per cent. of all deaths of policy-holders in his company occurred from some form of Bright's disease, made an extensive examination of the urine of all applicants from 1877 to 1880. He used the heat and nitric acid test, holding the test-tube containing the urine before a reflected light. He lays great stress upon the care with which the urine should be examined—*i.e.*, acidified, if alkaline, and allowed to stand a sufficient length of time after the addition of the acid. In following up the histories of the rejected cases, he found, in 1880, that four had died out of sixty-nine, and the general health of those who had been under observation for more than one year was gradually deteriorating, and for this reason he was inclined to regard albuminuria as of grave significance.

Without attempting to draw any inference from these cases, I think one or two points deserve notice. When a urinary examination is to be made, the applicant for life insurance should bring specimens passed in the forenoon and afternoon as well as at night. If albumen be present, a sufficient number of examinations should be made before a diagnosis between a nephritis and cyclic albuminuria be made. In every case a microscopic examination should be made, as casts may be present when albumen is absent. Of course, so called accidental albuminuria, due to gonorrhoeal pus, or to some inflammation in the ureters or bladder, should not be mistaken for Bright's disease.

Treatment seems to have little or no influence upon this form of albuminuria. Ralfe seems to think that time alone, and not drugs, will cure it. Saundby,[3] also, admits that he could never cure one of these cases. My patient is at present taking iron in the form of the tincture of the chloride, but at the time the above test was made all medicine was purposely withheld.

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[1] Ralfe: British Medical Journal, November 27, 1886.

WAKING NUMBNESS.

BY C. L. DODGE, M.D.,
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THE MEDICAL NEWS, of June 4, 1887, called attention, editorially, to an article by Dr. Andrew H. Smith, of New York, in the April number of *The*

[1] George Johnson: British Medical Journal, 1870. II.
[2] John Munn: Medical Investigations in Life Insurance.
[3] Saundby: British Medical Journal, November 27, 1886.

American Journal of the Medical Sciences, where he describes a curious neurosis characterized by numbness on waking, either general or confined to the distribution of the ulnar nerves. I wish to add two cases to Dr. Smith's collection, as this certainly is a very rare affection.

Case I.—Twenty years ago, a lady, thirty-eight years of age, consulted my preceptor for a peculiar numbness and tingling sensation in the left arm, extending to the tips of the little finger and the ulnar side of the ring finger. She was quite alarmed about it, and imagined it was commencing paralysis or something of that kind. She herself attributed it to overwork and a strain of the back. She was advised rest, friction, and tonics, and she improved, but has been subject to these night attacks (they never occur at any other time) ever since, though free from them for weeks at a time.

The most singular circumstance about the second case is that the gentleman affected in this peculiar way is a son of the lady mentioned above.

Case II.—A gentleman in good health, thirty-three years of age, actively engaged in professional work, has, for over twelve years, experienced these same numb, tingling sensations, *occasionally* on waking out of a sound sleep; in his case the sensation exactly resembled that which results from pressure upon a nerve, and which we commonly speak of as the foot being asleep. Motion, sensation, and the tactile sense were entirely unaffected, although the arm felt heavy and dead, as he expressed it. It sometimes happens on one side and then on the other, but he is positive that it is not caused by pressure upon the nerves. The peculiar sensation does not last over a minute and never recurs again the same night. He also told me that it once happened to him some years ago, in the daytime, when he fell asleep in a chair, and at that time he was in such a position that no pressure could have been made upon the nerves. In his case the numbness never extends above the shoulder and rarely above the elbow. It appears to commence in the extremities of the fingers and extend up the arm.

Dr. Smith says, "from a study of these cases it is apparent that the numbness is something added to the normal condition, while nothing is subtracted from it. It is a purely subjective condition. Doubtless the conditions upon which the numbness depends are present during sleep, but the sensation is not sufficiently strong to arouse the sleeper, and he first becomes conscious of it when awakened by some other cause." The cause of this condition Dr. Smith thinks, is probably central, since the effect is usually symmetrical. One of his cases, however, and both of mine, were affected in one arm only.

I am inclined to think that sexual excesses bear a causative relation to this condition. At least, in Case II. the gentleman admitted that he thought he experienced the sensation more frequently when given to excesses of this kind.

As to treatment, I advised him to take more outdoor exercise, to be temperate in all things, and apply friction to the parts. I also prescribed tonics to improve the general health.

MEDICAL PROGRESS.

Artificial Foods for Infant Feeding.—Dr. Edgar Everhart, Chemist to the University of Texas, reported as follows to the State Scientific Association, on the analysis of the foods most commonly sold for infants:

1. No infant food, as now sold, can be made up, either with or without the addition of cow's milk, so as to produce a liquid having as great an amount of total solids (13.75 per cent.) as are in woman's milk, unless indeed such total solids consist of such an injurious substance as starch, or the casein of cow's milk.

2. Not one of these infant foods is composed of nitrogenous matter that is as easy of digestion as is that of woman's milk. The chief source of such nitrogenous matter is cow's milk, and not the foods themselves. The fact that starchy matter prevents the formation of clots in cow's milk, is no reason for introducing a still more indigestible substance in a child's stomach than would be the clots themselves. Besides, the formation of a clot is not the only reason of the greater indigestibility of casein.

3. The percentage of fat is uniformly too low for the requirements of the infant organism.

4. Because the soluble carbohydrates, even when present in large amounts, are different in chemical properties, and most likely also in physiological, from the milk sugar contained in woman's milk.

5. Chiefly because the great majority of infant foods introduce a substance into the stomach of the child which is never found in woman's milk, and which we know by direct proof cannot be assimilated by the digestive system of an infant.

6. In those cases where there is an approximation to woman's milk, this approximation is due to the use of cow's milk. The use of such foods as Liebig's is not so objectionable as the farinaceous; they are only useless, because their only function practically is to increase the percentage of the carbohydrates. This increase can be as well and more cheaply made by the addition of a little ordinary sugar, or, still better, by milk sugar. The addition of Liebig's food does not change the character of the nitrogenous matter of cow's milk, either before or after it is taken into the stomach.

Colored Gauze as used in Lister's Wards.—Dr. Senn writes of a visit to Lister's wards as follows: "The only thing that was new to me in the way of dressing wounds was the colored gauze, which is used to distinguish it from gauze not rendered aseptic. Great importance is placed upon the disappearance of color on the surface of the gauze, as an indication that the secretions from the wound have reached the surface, an occurrence which is looked upon as a necessity for a change of dressing. A number of lumbar abscesses were shown which had been simply incised and drained, and where the whole dressing was composed of a very thin and small compress of gauze and a layer of absorbent cotton still smaller than the gauze compress."—*Journal American Medical Association*, June 4, 1887.

When Can Diphtheria be Diagnosticated?—Simon, of Paris, in an article in *Le Progrès Médicale*, of June 4, 1887, writes as follows: "Supposing that your

first visit has been made in the morning, return the same evening; and if you can define a small whitish pellicle which, beginning at the first point in the throat which was affected, has spread until, like a spider's web, it is about to attach itself to the opposite side of the throat, and if, above all, the *velum palati* is implicated, do not hesitate to affirm that diphtheria is present."

Hydrochloric Acid and Laudanum for Cholera Infantum.—Henoch has used successfully the following:

Sweetened water . . .	a teaspoonful.
Laudanum (Sydenham's) .	½ to 2 drops.
Dilute hydrochloric acid .	2 drops.

This dose may be repeated several times daily, as indicated.—*Revue Générale de Clinique*, June 23, 1887.

An Application for Freckles.—

Fresh milk	ʒ 12½.
Glycerine	ʒ 7½.
Acid. hydrochloric. dil. . . .	♏ 75.
Hydrochlorate of ammonia . .	ʒ 1.

Dissolve.

Touch the freckles with a brush dipped in the solution morning and evening.—*Journal de Médecine*, June 5, 1887.

The Treatment of "Heat-stroke" in the English Army.—Surgeon G. Douglass Hunter describes the following treatment which he used successfully among the English troops in the tropics:

Treatment must be immediate and thorough. The patient should be stripped and laid in the coolest place possible—in the shade outside is best—and cold water dashed on the head and spine; this should be maintained; a large enema administered, and the lower bowel well emptied. If the patient regains consciousness, he may then be placed on his bed (if the temperature remains high) in a wet pack, and ice kept to his head. Five grains of calomel may then be administered, and diaphoretics given frequently. To promote free action of the skin and maintain the action of the bowels is very needful. If a relapse threatens, douching should be at once resorted to. If there are no signs of rallying, use sinapisms to the heart, frequent douching, ice to head and spine, friction of the limbs; if the pulse is failing, brandy at frequent intervals in small doses and brandy enemata. If respiration is failing, artificial respiration should be employed and well kept up. On no account give up every attempt until life is quite extinct. On no account bleed the patient. The after-treatment is to maintain free action of the skin and bowels—tonics and change of air to a temperate climate.

The essence of treatment is to reduce the bodily temperature as speedily as possible, and the surest way to do this is by the application of cold water and ice; this should be maintained, and the least relapse dealt vigorously with in the same way. Immediate action of the bowels by enemata is very necessary, and an emetic is beneficial in suitable cases.—*British Medical Journal*, July 9, 1887.

A New Hypnotic.—At the recent meeting of the Society of Neurologists and Alienists of Southwestern Germany, held at Strassburg, von Mering reported his use of amylen-hydrat, or tertiary-amyl-alcohol, in 60 cases. The drug was administered 250 times to patients suffering from mental and nervous disorders. Its dose ranges from 30 to 75 minims; sleep so produced lasted from six to eight hours, and no ill after-effects followed. Its taste is more agreeable than that of paraldehyde. It was given in the following mixture, which was well shaken before taken:

Amylen hydrat.	ʒ 1.
Aq. dest.	ʒ 10.
Ext. liquritiæ	ʒ 1.

—*Deutsche medicinische Wochenschrift*, June 23, 1887.

Treatment of Perihepatic Tubercular Abscess.—Lannelongue, in a paper read recently before the Academy of Sciences at Paris, recommended

1. Simple incision and thorough disinfection and drainage of such abscesses when readily accessible.

2. The resection of the lower ribs to the sixth or seventh whenever necessary to secure free access in treating abscesses upon the convexity of the liver, hepatic abscesses proper, and hydatid cysts subdiaphragmatic.—*Gazette Hebdomadaire*, June 10, 1887.

Asthma Therapeutics.—Lazarus, of Berlin, is quoted as follows by the *Journal of Laryngology* for May, 1887:

1. The prophylaxis of bronchial asthma requires a report of the hereditary and constitutional conditions present, and especially of the condition of the mucous membrane of the nose and throat.

2. The asthmatic attack must be suppressed as soon as possible. The best medicament for this purpose is iodide of potassium and chloral. In special cases operative treatment of the nose and naso-pharynx is recommended.

3. The treatment of the secondary affections is the more important in that they may become causes of recurrence of the asthma. For these conditions the best treatment is the pneumatic chamber. In chronic catarrhal conditions of the bronchi the best treatment is turpentine and iodide of potassium.

Tuberculous Contagion Conveyed by the Meat of Fowls.—Lamallerée recently reported to the Paris Academy of Sciences a case where a phthisical husband conveyed tubercular contagion to his wife, who, after his death, developed pulmonary tuberculosis. She sold fowls to a neighbor, with whom she had no other association. The flesh of these fowls was eaten underdone, and the neighbor, after consuming eleven of these chickens, showed tubercular pulmonary disease.

Examination of a fowl showed the presence of tubercle and bacilli. The expectoration of the owner of the chickens had been profuse, and the fowls had eaten the sputa.—*Semaine Médicale*.

A Convenient Formula for Oil of Wintergreen.—Much difficulty has been reported in finding an eligible mixture containing oil of wintergreen, so

valuable in acute rheumatism, and also employed in other affections. The following may be commended:

℞.—Olei gaultheriæ . . . . . ♏clx.
Mucilag. acaciæ . . . . . f℥ij.
Glycerinæ,
Aquæ . . . . . ää f℥j.
M.—Sig. Dose, one to two teaspoonfuls, as may be required.—*Pharmaceutical Record*, June 15, 1887.

BARIUM CHLORIDE IN VASCULAR DISEASES.—KOBERT, of Dorpat, Russia, writes as follows in the *Therapeutic Gazette* of June 15, 1887: The best application for dilated cutaneous veins (for example, on the legs) is the following:

℞.—Barii chloridi . . . . . gr. xxx.
Dissolve in distilled water and mix thoroughly
Lanolini . . . . . ℥ij ¾.
Olei amygdalarum dulc. . . . ♏lxxv. M.
F. Unguentum.
Sig.—Three times daily, with friction, whenever dilated blue veins shine through the skin.

Barium chloride can also be used hypodermatically in place of substances of the digitalis group, in cases of heart-disease where help is demanded so soon that remedies given internally are not available.

THE ODORS OF INFECTIOUS DISEASES.—DR. NIVEN writes as follows on this point, in an article on fevers in the *Medical Chronicle* for June, 1887:

It is a fact of some interest, at all events from a diagnostic point of view, that some of the infectious diseases possess special odors. The only odor, besides that of rheumatic fever, I have seen any mention of in literature is that of typhus fever, which is of a peculiarly heavy and offensive nature, and has been likened to the smell of rotten straw. It is quite characteristic, and is obviously not the result of filth, since it is present in the cleanliest people who have contracted the disease. It is evidently some special product of the virus of the disease, or of the tissues under its influence.

It is doubtful whether the same thing can be said of the disgusting and peculiar odor of smallpox, which occurs only in the worst cases, and is of the gravest omen. It is not present in cases which do well, even where the body is covered with scabs, and it therefore probably means merely necrosis of the tissues, and a ptomaïne generated in that process.

Some six years ago I made a minute study of scarlet fever, and I was very much struck by a peculiar sweet odor of the breath, almost aromatic in character, which, though far from unpleasant in itself, is rendered unpleasant by its associations. I also observed that this odor is most marked in the early stages of the disease. That this is no mere imagination will be clear when I mention that a nurse to whom I pointed this out, diagnosticated the occurrence of scarlet fever in a smallpox patient at the height of the smallpox, a whole day before any other symptoms of scarlet fever appeared, simply from the peculiar scarlatinal odor of the breath, and I have myself on several occasions been able to diagnosticate scarlet fever in this way before the appearance of the rash. This smell is sometimes excessively strong, especially in cases of what I should call toxic scarlet fever, where the throat is but little affected, the rash is discrete and dark, and there is much delirium. It is then like a powerful and heavy ether.

The same peculiar and sweet odor is fairly often to be observed in the breath in cases of typhoid fever, but never attains the penetrating and powerful character that it does in certain cases of scarlet fever. I have not been able to distinguish between the odors of typhoid and scarlet fever.

Measles also has a smell of its own, somewhat resembling that of scarlet fever, but quite distinguishable.

THE TREATMENT OF LARYNGEAL PHTHISIS.—MASSEI, of Naples, reports the results of his study and practice in laryngeal phthisis as follows:

1. We are still in want of some remedy, or remedies, to effect the cure of laryngeal phthisis.

2. Notwithstanding this want, the local (palliative) treatment of the disease is incumbent upon every physician.

3. Many of the cases quoted by various writers are of an extremely hypothetical nature, inasmuch as they have not been a sufficient time under observation.

4. Cocaine, iodoform, iodol, and sublimate are perhaps the best of all local remedies. Lactic acid, even by submucous injection, does not appear to have led to favorable results.—*Journal of Laryngology*, May, 1887.

CORROSIVE SUBLIMATE AND UREA IN SYPHILIS.—SCHUTZ has employed the following formula:

Aquæ destillat. . . . . ℥ 3½.
Hydrarg. bichlorid. . . . . gr. 15.
Ureæ . . . . . gr. 3½.

The amount of urea may be increased to eight grains. Fifteen minims daily should be given by hypodermatic injection. Twenty-six cases have recovered under this treatment, which acts more easily, promptly, and with less pain than do injections of other combinations.—*Journal de Médecine*, June 5, 1887.

FIFTEEN OPERATIONS UPON THE PREGNANT UTERUS.—HOFMEIER, of Schröder's Clinic, in Berlin, reported fifteen operations at the recent German Surgical Congress, whose results were as follows: Seven were cases of pregnancy complicated by carcinoma uteri, for which five supravaginal and two total extirpations were done; there were six cases of fibroma, and two Cæsarean sections. The mortality was two—one after supravaginal, and one after total uterine extirpation. Four cases were followed by abortion and return of the original lesion; and for one of these, in a woman the second time pregnant, a total extirpation was done. Fibromata were removed from the uterus twice—once at the end of pregnancy, once at five months. No difficulty was experienced in operating. After the elastic hæmostatic bandage was applied, the uterine wound was closed by étage sutures, and the peritoneum was carefully stitched over the incision with catgut. No hemorrhage came from a stump so sutured; it was replaced in the abdomen.—*Berliner klinische Wochenschrift*, May 30, 1887.

BACTERIA IN INTESTINAL DISEASE.—ESCHERICH, of Munich, in an exhaustive article in the *Centralblatt für Bacteriologie*, No. 24, concludes as follows:

Our knowledge of intestinal bacteria has made little

advance because of our ignorance of the bacteria found in normal intestines, and our lack of differentiation as to pathogenic and non-pathogenic bacteria.

Our efforts are at present confined to attempts to sterilize food, and we have as yet few researches upon the nature of intestinal bacilli themselves. The line of progress lies in this direction, and it is more than probable that analysis will separate cholera infantum into several diseases closely allied in nature and causation.

A SUCCESSFUL CASE OF EXTIRPATION OF THE LARYNX.—At a recent meeting of the French Society of Otology and Laryngology FAUVEL exhibited a patient, on whom Péan had, in 1885, performed extirpation of the larynx, leaving only the epiglottis and part of the arytenoid cartilages. The patient had resumed his occupation; he succeeded in making himself understood in a feeble, guttural sound, but in words formed by the mouth and lips; this voice, deficient in quality, was audible at a moderate distance. No appliance to improve his voice had been successful. The diagnosis before operation lay between epithelioma and syphilis.—*Revue de Largyngologie*, June, 1887.

A FORMULA FOR THE USE OF HYOSCINE AS A HYPNOTIC.—DR. DORSET, of the State Insane Asylum of Texas, has found the following of benefit:

Hyoscine hydrobromate	$\frac{1}{100}$ gr.
Paraldehyde,	
Oil of almonds	āā ʒ 2.
Chloroform	♏ 10.
Oil of cinnamon	♏ 2.—M.

The medicine given at bed-time, in drachm doses, in a great number of cases, is all that is necessary to secure a quiet, refreshing night's rest. The patients are not so nervous the next morning, and are ready to take a good breakfast.—*Texas Courier Record*, June, 1887.

THE TREATMENT OF PULMONARY PHTHISIS BY LARD WITH MILK.—DR. N. AKIMENKO, of Professor V. G. Lashkevitch's clinic, in Kharkov, writes that, having many a time heard of excellent services obtained by the Russian peasantry from treating various wasting chest diseases by the internal use of lard with milk, he resolved at last to give a fair trial to that popular remedy in several cases of early pulmonary phthisis. In all the cases the affection was diagnosticated on the ground of Koch's microbe being present in the patient's sputa. The method was practised in the following way: he took the fat from the omentum and mesenterium of a recently killed pig, soaked it for twenty-four hours in cold water, then picked out all connective tissue, and boiled from a quarter to a third of a pound of the fat with three glassfuls of unskimmed milk on a slow fire, for three or four hours, until about two glassfuls of fluid were obtained. The latter was then strained through a piece of muslin, and cooled down to be administered (after duly shaking) to the patient, the dose being at first one quarter or half a glassful three times a day; but by the end of a second week as many as three glassfuls a day. The results obtained were these: (1) The patients' weight invariably increased (in one of the cases the patient gained nine and a half pounds in thirty-three days). (2) Cough and expectoration were alleviated, while the quantity of sputum considerably lessened. (3) The appetite always improved. Such patients in whom the loss of appetite had formerly amounted to a complete aversion from meat, after the treatment of two or three weeks' duration, requested me to allow them an additional meat-dish. (4) The patients took the lard emulsions with pleasure; no digestive disturbances were ever observed. Pointing to his results, Dr. Akimenko recommends his professional brethren to try the lard treatment in phthisis, especially in such cases where cod-liver oil cannot be employed on account of its "verily disgusting taste," or in consequence of its causing gastric disturbances.—*Provincial Medical Journal*, June 1, 1887.

A STIMULANT INHALATION.—

R.—Essenc. terebinth.	ʒ 3ss.
Picis Norwegiensis	ʒ 5.
Chloroformi	♏ 15.—M.

Sig. By inhalation, to relieve hoarseness.—*Journal de Médecine*, May 15, 1887.

WHAT SALT OF QUINIA SHALL BE USED HYPODERMATICALLY?—*The Therapeutic Gazette*, of May 16, 1887, answers this question as follows:

As regards *quinine*, the question appears to be settled, for the time being at least, in favor of the *hydrochlorate*. At the last meeting of the Paris Society of Pharmacy (April 6th) the merits of the rival claimants, the sulphovinate and the lactate, were discussed and summarily disposed of. The *sulphovinate* has the disadvantage of decomposing when kept, and thereby becoming apt to cause abscesses when injected; the *lactate* of being but little soluble when crystallized, so that the solutions have to be made extemporaneously from freshly precipitated quinine and lactic acid, with some precautions to insure the percentage of active principle. On the contrary, the hydrochlorate is a stable compound, sufficiently soluble, and easily procured from dealers in well-defined crystals, much less liable to adulteration than the ordinary medicinal sulphate. The reason of this comparative purity may be that the sulphate is an old acquaintance of the dealers, in fact, too familiar to them, while the hydrochlorate is a new-comer. But it is unnecessary to borrow trouble; suffice it to say for the present that this salt appears to be the most eligible quinine compound for hypodermatic uses, and that it is, in the actual state of science, found in commerce unadulterated with other cinchona alkaloids.

MENTHOL AND COFFEE FOR CORYZA.—

R.—Menthol. pulv.	gr. 3.
Coffee roasted and finally ground,	
Pulverized sugar	āa gr. 75.

Use as a snuff.—*L'Union Médicale*, June 9, 1886.

TWO CASES OF INTRACRANIAL TUMORS.—At the recent meeting of the Fourth Congress of Italian Surgeons CECCHERELLI reported a case of sarcoma of the dura mater, whose site was the border of the right frontal eminence; another situated at the border of the right parietal eminence. The first case recovered; the second died.—*Revue Générale de Clinique et de Therapeutique*, No. 10.

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THE TREATMENT OF PHTHISIS.

IT must be admitted by those who deny the paramount etiological importance of the tubercle bacillus, that its discovery has given a much-needed impetus to the treatment of pulmonary phthisis. In proof of this statement, it is only necessary to point to the unusual number of papers upon this subject that have recently been read before the principal medical societies in this country and in Europe. One of the latest and most interesting of these discussions, in which DETTWEILER and PENZOLDT were referee and co-referee, took place at the Sixth German Medical Congress, recently held at Wiesbaden.

Although the question is not formally discussed, it is apparent that the first of these authorities is not prepared to deny the predisposing influence of constitutional and local processes, while the latter virtually announces his adherence to the doctrine of predisposition when he speaks of those who are vulnerable either through heredity or acquired disposition.

The referee and co-referee and those who followed them in the discussion, viz., BREHMER, MESS, THIEME, and HAUPT are practically of one mind with reference to treatment. The greatest importance is attached to a life in the open air, preferably in a region that is known to possess an immunity from phthisis. With reference to this latter point, the geological formation, as well as the atmospheric conditions of a health resort, must be considered. According to Gauster, the greatest immunity from phthisis exists in regions composed of mica schist, gneiss, and granite; the least in those where these so-called primary rocks are mingled with dolomite and chalky formations in general.

The open air cure—*dauerluftkur*, as it is significantly called in German—is not contraindicated by the greatest prostration, for patients unable to walk may be carried out of doors in their beds or in reclining chairs.

Fever is the worst enemy of the consumptive, and is to be combated by absolute rest in bed in the open air, with as liberal a diet as can be digested. Alcohol is advised to the extent of one-half to three-fourths of a pint of light red or white wine per diem, to be taken at meals, and, in cases which require it, from two to three ounces of cognac between meals. The new antithermal agents, antipyrin, thallin, and antifebrin, may be employed with benefit. Sweating may be controlled by the timely administration of an alcoholic stimulant, by atropine, agaricine, and, in the opinion of the writer, most effectively by picrotoxine.

When the fever is subdued, and not till then, muscular exercise, at first consisting of systematic movements in bed, and later, if the strength increases, of short walks with frequent rests, is to be taken daily.

This open air system is, so to speak, a hardening one, and to this hardening process Dettweiler attaches the greatest importance, for it affords the patient a greater immunity against the danger of repeated catarrhs of the air-passages. These catarrhs (colds) are peculiarly prone, in the phthisical, to invade the smaller bronchi, in the secretions (catarrhal) of which the bacilli, if inhaled from a higher focus, are detained and multiply in fresh colonies. Dettweiler urgently recommends the prompt and energetic treatment of every fresh catarrhal attack. His method is to place the patient in bed, with sufficient covering to induce rapid perspiration. He is then vigorously rubbed and supplied with change of clothing.

When all is told, the fate of the phthisical depends upon his ability to partake of and digest a sufficient amount of proper food, and it is an unfortunate anomaly of the disease that physiological hunger is in inverse ratio to the actual needs of the tissues for nourishment. At least one quart of milk should be taken in the interval between meals, to which may be added, if milk is distasteful, a small quantity of cognac, *kirschwasser*, carbonic acid water, or a little cold coffee or tea.

With reference to drugs, Penzoldt enters more into detail than does Dettweiler. He regards morphia as indispensable, but says nothing with reference to its dose or time of administration. It is a valuable palliative, and should not be administered an hour longer than the conditions are present for which it was indicated. These are general malaise, pain, and restlessness. As a hypnotic it is inferior to chloral. Inhalations of turpentine and tannin

may be used with advantage to check profuse expectoration. In the treatment of hæmoptysis, rest, ice, and morphia are considered more efficacious than styptics.

Thieme, of Mentone, was the only one of those who took part in the discussion who reported results from the treatment by gaseous enemata. He stated that while the accepted cause of the disease, the bacillus, was not removed, the general condition of the patient was improved by this method.

In this connection reference may be made to the discussion of Fräntzel's paper in the *Verein für innere Medicin*, at the meeting of May 16, 1887, on the use of creasote in the treatment of pulmonary tuberculosis. Experiments have shown this substance to be inimical to the growth of the bacillus when mingled, in minute quantity, with a gelatine culture medium, and on this fact is based its internal administration. The reports concerning the results of treatment by this drug are variable, but in a certain number of cases in the early stage it appears to be beneficial. Great importance is attached by Lublinski and Fräntzel to the use of a pure preparation from beech-wood.

By common consent a hygienic treatment, such as that outlined in the foregoing presentation of the views of Dettweiler and Penzoldt, is the most efficacious, and this will continue to be the case in the event of the discovery of the much hoped-for specific; for, supposing the local disease brought to a standstill by the removal of its cause, by no other means can the enfeebled system be roused to the labor of the retrograde ascent to health.

SUPPURATIVE PUERPERAL PERITONITIS.

Besnier recently reported to the Paris Society of Medicine a case which is typical of a class not infrequent, and very little amenable to medical treatment.

A young and previously healthy woman had completed her third normal labor under the care of a midwife. On the fourth day after confinement she was attacked by acute septicæmia, which she withstood with the aid of change of air, tonics, and stimulants. Besnier saw her six weeks after delivery: her abdomen was distended by an encysted abscess. Emaciation, malaise, apyrexia, night sweats, and a rapid, feeble pulse completed the picture of septicæmia. The pus-cavity was punctured and five and a half quarts of pus were evacuated. The cavity promptly refilled, but the patient's general condition was much improved, and she began to assimilate food and stimulants. The after-treatment consisted in the application of tincture of iodine and collodion to the entire abdomen, and the free use of tonics. The fluid and membrane which had lined the pus-sac were gradually absorbed, and cure followed in six weeks.

Beginning septic peritonitis after operations has been cured, in a few cases, by prompt disinfection and drainage. Rose, Tait, Mikulicz, Krönlein, and others, have operated for diffuse peritonitis with a few successes. Diffuse suppurative peritonitis is a disease whose mortality is very high. When of tuberculous origin, it may be greatly benefited by drainage; but the character and relative positions of the abdominal contents are such that a diffuse septic process offers the greatest difficulty to operative treatment.

In the case under discussion the first indications of sepsis should have been met by prompt intra-uterine disinfection, of which the midwife was ignorant. Under the existing circumstances, one of two procedures was admissible: ventrotomy with exploration and disinfection of the cavity, and aspiration with the injection of iodoform in ether or vaseline. The choice rested upon the diagnosis of encysted, and not diffused, suppuration.

In the present case the suppurative process was thought to have been "benign," probably because recovery followed. This doctrine, although venerable, is a poor rule of action; and the patient's cure must be ascribed more to the resistant powers of the peritoneum, and the patient's ability to assimilate food and tonics than to any benignity on the part of the ptomaines and bacteria of septicæmia.

The occurrence of diffuse septic peritonitis is one of the most serious complications of parturition, and is to be met by the prompt application of those principles of conservative surgery which are so successful in like conditions elsewhere in the body.

EXCISION OF THE MEMBRANA TYMPANI AND THE OSSICLES OF HEARING.

Since the time of Valsalva it has been known that loss of the membrana tympani and the ossicles, except the foot-plate of the stapes, does not cause complete deafness, but at most hardness of hearing. Nevertheless, an erroneous impression has gained a hold in the minds of physicians and the laity, that loss of the membrana tympani necessitates loss of hearing. The first endeavors to excise the membrana partially, with the view of aiding the hearing, date from the beginning of this century, and were made by Karl Himly and Sir Astley Cooper. Similar trials were made by Deleau, Fabrizi, and Brunner (1841), and by Bonnafont as late as 1860. But their instruments and their operations were clumsy and rough, and their results very unsatisfactory. Their aim was to make and maintain an opening in the membrana, rather than to excise either it or the ossicula. But they all alike failed to make a permanent opening. Wreden then pro-

posed to resect part of the handle of the hammer, hoping thus to prevent entire healing of the opening in the membrana. But this method failed in its object, as all previous ones had done. This was especially disappointing, as in most cases the hearing improved so long as the opening in the membrana was maintained.

Then came a variety of suggestions as to ways of making a permanent opening in the drum-membrane, as, for example, by means of iodide of mercury, sulphuric acid, and the galvano-cautery. But the opening thus made would always close as soon as all the acute symptoms of inflammation had subsided. The operation for making a permanent opening in the drum, in order to improve the hearing, was then given up. The fact that in purulent processes the hammer and the incus can be thrown off without a very high degree of hardness of hearing as a result, led to the idea that obstructions in the sound-conducting parts of the tympanic cavity, lying to the outward of the stapes, and caused chiefly by immobility of the hammer and anvil, could be removed by excision of the ossicles.

Schwartze performed excision of the membrana, and extraction of the entire hammer, for relief of sclerosis, in 1873. The temporary improvement in hearing disappeared as soon as the imperfectly excised membrane had formed again. Lucæ, of Berlin, seems to have performed a similar operation in a number of cases, but his results are not fully published. Kessel, of Prague, has suggested that to prevent a regrowth of the membrana tympani, the annulus cartilagineus, in the posterior circumference of the membrana, be removed, and eventually a resection of a portion of the sulcus tympanicus be performed by means of a chisel.

In 1886, DR. SAMUEL SEXTON, of New York, presented a paper before the American Otological Society, in which he set forth "A New Operation for the Radical Cure of Chronic Purulent Inflammation of the Middle Ear Tract." In this procedure the remnants of the membrana tympani, and especially that part of it known as the membrana flaccida, are first cut away, and then the malleus and the incus are removed, the latter being first separated from its attachment to the stapes. This operation has been performed by Dr. Sexton nineteen times within the past year and a quarter, with very satisfactory results as to the cure of the chronic otorrhœa, and improvement in hearing in many cases, although the operation was not undertaken for the attainment of the latter result.

As the operation is of importance, the foregoing historical sketch seems demanded, in justice both to the profession and the laity, in order that both may see the legitimate development of a valuable surgical operation.

SPONTANEOUS RUPTURE OF THE CORD.

RUPTURE of the umbilical cord in labor is a comparatively rare accident. It has occasionally occurred when a woman has been surprised by the expulsion of the child while she was standing, the child falling to the floor, for a sudden force less than the weight of the child will cause the cord to give way.

But can there be a spontaneous rupture if the woman be delivered in bed? This is a very important question in medical jurisprudence. For example, if a mother be found with a recently born child that is dead, the death having been caused by bleeding from a ruptured cord, that rupture occurring at the umbilicus, or at some other part, one might hastily conclude that the injury was done by the mother, or by some one else, and its purpose was to kill the child. Some cases, however, reported by BUDIN, in the *Annales d' Hygiène Publique* for June, 1887, prove that the conclusion might be quite unjust; in other words, spontaneous rupture of the cord may occur where there has been no interference whatever, and the mother was delivered in bed. The number of cases of this accident presented by Budin is four, the first by Schatz, the second by Dupuy, and the other two occurred in his own service in La Charité. In neither of Budin's cases was there any relative or absolute shortness of the cord, and it was of usual size; the rupture occurred solely from the utero-abdominal contractions which expelled the child.

MOUNT HOLLY, N. J., is suffering from an epidemic of typhoid fever, which is said to have originated in the water supply becoming polluted by the fecal discharges from a case of typhoid fever which existed during the spring at Smithville, a small village about four miles above the town and on the creek from which the water supply of Mount Holly is drawn.

It is well nigh impossible to prevent the pollution of water courses, but ample experience has shown that it is easy and an imperative duty to disinfect typhoid stools before emptying them, and thus to destroy their power of propagating the fever.

THE twentieth annual meeting of the West Virginia State Medical Society was held at the White Sulphur Springs, on July 13th, 14th, and 15th, under the presidency of Dr. Samuel L. Jepson, of Wheeling. A number of distinguished members of the profession from neighboring States were present and contributed to the proceedings. Dr. Luther S. Brock, of Morgantown, was elected president for the ensuing year, and Huntington was selected as the next place of meeting.

THE State Board of Health of West Virginia has attained an enviable reputation by reason of its efficiency and the professional standing of its members. On the accession of the present Governor, the influence of the administration appeared to be against the work of the Board. Bills incurred by the Board were refused approval, appointments provided by the State laws were neglected, and, finally, a member, said to be ineligible under the laws of the State, was appointed to office.

This appointment led to a protest by twenty-nine physicians of Wheeling; the State Medical Association, at its late meeting, denounced the action of the Governor, and public sentiment is in accord with that of the profession in resenting it.

Nothing is more deplorable than the refusal of the State to coöperate with and support the efforts of the medical profession for the public good.

SOCIETY PROCEEDINGS.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-th Annual Meeting, held July 10, 1887, at New London, Conn.

Specially reported for THE MEDICAL NEWS

MORNING SESSION.

The Society was called to order at 10.30 A. M. by THE PRESIDENT, DR. J. S. PROUT, of Brooklyn.

PRELIMINARY BUSINESS.

DR. E. E. HOLT, of Portland, was elected Secretary *pro t m.*

Resolutions expressing regret at the absence of THE SECRETARY, DR. J. J. B. VERMYNE, who was prevented by ill health from being present, were adopted, and the Secretary of the meeting was directed to forward a copy to Dr. Vermyne.

The report of the Committee of Conference with reference to the formation of a

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

was adopted, and the following resolution was also adopted:

Resolved, That the Society expresses its acquiescence in the general plan for the formation of a congress of special societies, as set forth in the printed minutes of the Washington meeting of September 24th. The naming of the representative and alternate to executive committee of the congress was left to the nominating committee.

DR. H. KNAPP, of New York, presented

THE EXAMINATION OF THE POWER OF HEARING, AND HOW TO RECORD ITS RESULTS,

the report of a committee consisting of Drs. H. Knapp, J. S. Prout, and D. B. St. John Roosa. The tests for hearing described were the watch, the voice, Politzer's acumeter, and the tuning-fork. The watch is one of the best means of testing the hearing. A low-ticking watch is of service in indicating the lowest degree of hardness of hearing in those cases where the patient has not become aware of the defect. This is, however, not sufficient to measure the higher degrees of deafness. In these cases a loud-ticking watch or Politzer's acumeter must supply its place. Each of these instruments must be tested by the physician in his office on a number of normal ears, in order that he may obtain a standard. It is a fact that in persons over fifty-five years of age, a low-ticking watch may not be heard when placed over the temporal or mastoid bone if the ear is closed, but will be heard if the ear is open.

With reference to the voice as tests for hearing, the whispered voice, the voice of ordinary conversation, and the loud voice, are used. Each observer must test his own voice by the acuteness of hearing of normal persons between the ages of twenty and forty-eight years of age. The state of the room as to noise and quiet should always be considered.

The tuning-fork over all parts of the skull is heard louder and longer when the ear is closed than when it is open. All tuning-forks are heard longer by air-conduction than by bone-conduction. Low tuning-forks are heard louder, but not longer, by bone-conduction than by air-conduction. Departure from these conditions indicates disease.

DR. SAMUEL SEXTON, of New York, thought that sufficient importance had not been given to the varying conditions of the patients themselves. He found that in cases of chronic catarrhal inflammation of the middle ear, and also in acute forms of inflammation, that there are constantly varying changes in the tension of the drum and in the transmitting mechanism. In these cases the acuteness of hearing changes from hour to hour or day to day. He had noticed that in the morning, when the perceptive faculties are active, a patient will hear better than he will later in the day. It is also well known that the vapor tension of the air, as well as the temperature, has something to do with the transmission of sound. The hearing is better in cold weather than in hot. He thought that there would always be difficulty in obtaining accurate tests for the more interesting cases which come under observation.

DR. ST. JOHN ROOSA, of New York, was not inclined to lay such stress as has been done on the variations in hearing from hour to hour in cases of chronic inflammation of the middle ear. These variations do occur in cases of disease of the middle ear, but he thought that they are more marked in disease of the internal ear. In cases of nervous deafness the condition of nervous exhaustion has much to do with the capacity for hearing.

DR. SAMUEL THEOBALD, of Baltimore, mentioned an observation bearing upon the use of the tuning-fork, which he had made in a number of instances, and which he had been unable to explain. In certain cases, when the tuning-fork is placed on the vertex, the patient will hear it louder in one ear, say the right; then striking the fork again, and placing it upon the forehead, it will be heard best in the left ear. This had given him less confidence in the tuning-fork as a differential test between middle-ear and labyrinthian troubles.

DR. KNAPP said that for practical purposes we must test the hearing as accurately and with as little loss of time as possible. In certain cases of chronic catarrh we get no change in the hearing power by any test. In these cases, he thought that nothing is to be looked for from treatment. Where, however, by changes of weather, or changes in the patient's condition, there is a change in the hearing power, we know that there is

something to improve. We get not only an estimation of the condition, but we also get a foundation for prognosis and an indication for treatment.

DR. CHARLES H. BURNETT, of Philadelphia, reported a case of

SUCCESSFUL REMOVAL OF AN EXOSTOSIS FROM THE EXTERNAL AUDITORY CANAL BY BONE-FORCEPS AND CHISEL.

The patient was a physician, about thirty years of age, in whose right ear the exostosis had been growing for fifteen years, and within the past year it had entirely occluded the meatus and caused deafness. The growth was about one centimetre in diameter, pediculated, and attached to the anterior wall of the meatus just within the outer edge of the tympanic bone. Its outer surface was covered with thick and rather insensible skin. After a hypodermatic injection into the concha of fifteen minims of a five per cent. solution of hydrochlorate of cocaine, the outer surface of the exostosis was seized by specially devised bone-forceps and a piece of the bone tumor cut off. About one-half of the growth was thus removed in successive pieces. As the blades of the forceps could not enter further into the meatus and get hold of the remnant of the exostosis, a small chisel a few millimetres in width was placed against the attachment, and a blow from a hammer on the chisel knocked off the remainder of the growth *en masse*. The operation caused very little pain or bleeding. The fundus of the canal and the membrana tympani were covered with a glove-finger cast of epithelium. This was removed, and the hearing found to be normal. The ear was dressed with a little iodoform and stopped with cotton. There was no reaction, and the cut surface of bone on the wall of the meatus at the point of attachment of the exostosis, was entirely covered with skin in two or three days. Usually drills impelled by the dental lathe have been used to open the lumen of the canal occluded by exostosis. The novelty in this case consisted in the use of bone-forceps, devised by the author to remove the growth as far as possible, and then the use of hammer and chisel to complete the opening.

DR. KNAPP said that to attack exostoses at the apex with the chisel, where they consist of ivory bone, is most difficult. The most efficient way in his experience is to attack them at the base. Here the bone may be much softer. In the after-treatment cleanliness and antiseptic precautions are of the utmost importance. He considered this a safe and the most efficient method of removing these ivory tumors with large bases.

DR. J. A. ANDREWS, of New York, endorsed what Dr. Knapp had stated. Where these osteomata are situated in the orbit, much serious injury may be inflicted upon the brain by the use of the chisel. It would be much easier to fracture the plate of bone lying against the brain in osteoma of the frontal sinus by attacking the tumor itself than by attacking the bony surroundings of the growth.

DR. D. B. ST. JOHN ROOSA read a paper on

THE DIFFERENTIAL DIAGNOSIS BETWEEN AFFECTIONS OF THE MIDDLE EAR AND THOSE OF THE LABYRINTH.

There has been some difference of opinion as to our ability to differentiate between affections of the middle ear and those of the labyrinth. Many cases usually classed under affections of the tympanum should be placed among diseases of the cochlea or of the acoustic nerve. The records of seven recent cases were given in detail. These cases were nearly all in the middle period of life, when its cares and troubles are most pronounced. Such patients often exhibit symptoms of nervous exhaustion. These cases may be benefited by the administration of strychnia, arsenic, and quinine. Proper hygiene should be employed. The universal use of the watch as a test of hearing occasionally leads to false conclusions on the part of the general practitioner, who discovers loss of hearing by testing with the watch alone. When used alone, I regard the watch as inefficient. When both the watch and the voice are heard badly there is cause for anxiety. Many persons have lesions which cause them to hear the watch and certain other tones badly who can hear the voice well. In the opinion of the author, those persons who hear conversation better than the watch, who hear better in a quiet room than where there is noise, and who hear the tuning-fork better through the air than through the bone, suffer from an affection of the labyrinth or nerve, and not from disease of the tympanum, although the latter may be engrafted upon the previous affection. The general adoption of this view would save a good deal of local treatment of the nasopharynx and tympanum, and greatly simplify and improve our therapeutics.

DR. EMIL GRUENING, of New York, asked if the cases described by Dr. Roosa were benefited by general treatment?

DR. ROOSA said that, as far as the aural condition is concerned, he regarded these cases as incurable. He thought that we could assure those patients that if the general health be looked after carefully that they will never hear so badly but that they can hear in a quiet place. This has a good moral effect. It makes the patient happier, and enables us to dispense with such useless treatment.

DR. HOLT for several years had performed experiments with the tuning-fork, but had not been able to reach the conclusions presented by Dr. Roosa. We may find quite a degree of deafness, and still the tuning-fork will be heard longer by air conduction than by the bone. He had seen many cases where bone conduction would be longer than air conduction, and where by treatment the air conduction would become longer. It is difficult to test the hearing properly with the watch, unless it is made with a stop. In his own case, he hears the watch very badly. He hears the tuning-fork by air conduction three or four times longer than by bone conduction. In an ordinarily quiet room he can hear all that is said, but in the cars he can hear better than a person with normal ears.

DR. ROOSA said that the case of Dr. Holt would not agree with his experience, which is that a person who hears well in a quiet room, and who hears the watch badly, always hears worse in the cars than he does in a quiet room.

DR. ROOSA then made some

REMARKS UPON A CASE OF CEREBRAL ABSCESS.

The patient, a boy, aged eleven years, came under observation May 4, 1887, with a painful swelling over the right ear. It was said that the boy had had some

trouble with the ear two years before, but that there had been no discharge. For three months he had tinnitus aurium and vertigo. One week before he was seen he had pain in the ear, then this swelling appeared. Bone conduction with the tuning-fork was better than aërial conduction. The hearing of the left ear was normal. Immediately above and in front of the auricle there was a swelling the size of a walnut. This presented fluctuation. There was a history that previous to admission to the hospital the treatment had consisted in the use of injections and the insufflation of powders. The auditory canal was filled with a white substance, which was supposed to be the powder that had been employed. The day after admission the patient was etherized, and the abscess opened with the removal of half an ounce of laudable pus. No fistula was discovered. The patient did well for nine days. Nausea and vomiting then set in, and the temperature went up to 104°. The patient sank into a condition of coma, and died on the tenth day after admission. At the autopsy there was found a cerebral abscess one and one-half inches in diameter, situated in the temporo-sphenoidal lobe, one-half inch from the surface of the brain. This was lined with thick membrane. The membrana tympani was perforated, and the upper wall of the canal was necrotic. At the junction of the mastoid and squamous bones, there was a spot of necrosis one-half inch in diameter. The canal and mastoid cells were filled with caseous material.

DR. ROOSA also reported the history of a case of

SUPPURATION OF THE TYMPANUM OCCURRING IN A PATIENT WITH BRIGHT'S DISEASE.

The patient, a woman, aged forty-two years, was seen April 11, 1887. There was intense pain referred to the left ear, which had existed since the day before. The hearing was much impaired as the result of a chronic non-suppurative inflammation of the middle ear. The bone conduction was better than the aërial. There was a watery discharge from the left auditory canal. Examination of the urine revealed the presence of Bright's disease, and the patient died some days later from œdema of the lungs. The point which the author made was that although this patient complained a good deal of the mastoid proces, it was determined that there was no lesion requiring operation, because of the absence of the characteristic symptom of tenderness at the apex. The case was regarded as one of tympanic trouble. The post-mortem proved that there was no trouble with the mastoid, but acute suppuration of the tympanum occurring in a patient with chronic non-suppurative inflammation. The patient died with Bright's disease.

DR. W. H. CARMALT, of New Haven, remarked that the author spoke of tenderness of the mastoid as though it were an almost infallible sign of suppuration in the mastoid cells. He asked if we should expect to find this sign always?

DR. ROOSA thought that this is a very strong test, although by no means infallible.

DR. GRUENING last winter saw a number of cases of abscess. In children he opens the abscess, and invariably opens the mastoid cells, especially where the abscess has been preceded by otitis media purulenta. In four of the seven cases the mastoid cells were filled with pus. In this way, thorough drainage was established, and all the patients recovered. He saw three cases of otitis media purulenta treated by insufflation of powder, leading to retention of secretion and death. All died of meningitis.

DR. B. E. FRYER, of Kansas City, asked whether the abscess and the affection of the ear were of the same duration?

DR. ROOSA thought that the cerebral abscess was of long duration, months, possibly years. The abscess was undoubtedly induced by the tympanic disease.

DR. LUCIEN HOWE, of Buffalo, remarked that this case called to mind one which he had seen in a child where there was a history of recurring attacks of ear trouble with discharge. It was stated that good results had been obtained by the use of alum and boric acid. This was continued and the patient began to develop the typical signs of mastoid trouble. He etherized the child and removed the accumulation in the outer ear and all the symptoms then subsided.

DR. W. H. CARMALT said that the fact that the cerebral abscess was surrounded by a thick membrane did not prove that it was of long duration. In a recent case of cerebral abscess resulting from an injury over the parietal bone, he attempted to reach the abscess by trephining, and passed a knife two and a half inches in the direction where he supposed the abscess to be, but got no pus. The man died, and an abscess was found in about the position exposed. The wall was so thick that the pressure of the knife had squeezed the pus into the lateral ventricles and death had been the result. In this case the operation was performed within two months of the original injury.

DR. E. E. HOLT, of Portland, read a paper on

AN EFFICIENT POWDER BLOWER, WITH REMARKS ON THE USE OF POWDERS IN THE TREATMENT OF DISEASES OF THE EAR.

The powder blower consists of six or eight inches of small glass tubing to which are attached about fifteen inches of rubber tubing. The glass tube is plunged into the powder until a sufficient amount is introduced into it. The powder is gently drawn into the proximal end of the glass tube. The distal extremity is then placed in the speculum and the powder blown into the ear. By drawing the powder from the distal end before blowing it, it is carried *en masse* to the desired point and applied evenly to all parts. The instrument can be used with great facility. After trying various powders, boric acid has been found the most efficient in the largest number of cases. One of the first cases in which the author had used this powder was one in which treatment for over two years had failed to cure a suppurative otitis media. Upon the application of the powdered boric acid the discharge ceased, and has not returned, a period of five years. Cleanliness, before using the powder, is essential. A comparison of cases of chronic suppurative otitis media treated with boric acid with those treated without this agent, led to the conclusion, that while the discharge from the ear ceases much earlier when the powder is used, yet perforations in the drum head heal less frequently.

DR. SAMUEL THEOBALD exhibited a powder blower similar to that of Dr. Holt, with the exception that the glass tube was substituted by a piece of goose-quill and

that the rubber tube was furnished with a mouth-piece consisting of a quill. The powder is introduced into the quill and by shaking brought to the proximal extremity of the tube, the object being that it shall be thrown into the ear in the form of a cloud.

Dr. Wm. W. Seely, of Cincinnati, had never seen any benefit from blowing powders into the ear. He had seen only good results where the powder is packed into the canal. He, however, now rarely uses the powder in any way. In these cases of suppuration there are three points to be observed: the Eustachian tube should be kept open, the naso-pharynx should be treated as in any other case of inflammation of the middle ear, and the ear should be kept clean by the use of cotton probes.

Dr. Roosa, of New York, had found the syringe the best means of cleaning the ear. He uses powders with great circumspection, and considers them inferior to other methods of treatment.

Dr. B. Alexander Randall, of Philadelphia, said that in treating a number of cases of purulent discharge which had continued from five to fifteen years, and in which the discharge had been pretty continuous and fetid, he had cleansed the canal and used boric acid; at first blowing it in lightly, and finally filling the canal pretty full without packing. Within a few days the powder is dissolved, and the discharge is usually diminished in quantity and the odor is lost. In eight out of every ten cases, that had been his experience. He had never seen any bad results.

Dr. Knapp used boracic acid in acute cases of otorrhœa as an antiseptic and cleansing powder. The patient is directed to cleanse the ear with the syringe three times a day. The powder is then introduced by means of a spoon until the canal is loosely filled. If the powder becomes moist the patient is directed to syringe the ear and renew the application. The majority of acute cases do not require any other treatment. In chronic cases he removes any polypoid growths or any carious bone that may be present, and then uses alcohol in fifty or sixty per cent. strength or absolute with sulpho-carbolate of zinc, and changes that with nitrate of silver. He continues this treatment until the ear is dry and there is no discharge, and then directs the patient to do nothing beyond using a light cotton plug to filter the air. He does nothing to the perforations. In one case he makes an exception, and that is when a perforation of moderate size has perfectly clear edges and remains in the same condition for weeks or months. Here he pastes a small piece of sized paper over the perforation. In many cases the hearing is improved, and it seems to stimulate the healing of the perforation.

Dr. C. R. Agnew said that in using fluid applications in the treatment of these cases he had employed a procedure which might be new to some of the members. After cleaning the ear in which he wants to diffuse a fluid application as much as possible, he turns that ear uppermost and fills the external canal with the solution. Then he inserts the nozzle of the Politzer apparatus into the external canal and makes pressure, diffusing the liquid to all parts of the ear and making it appear in some cases in the pharynx. This sometimes may be of value.

Dr. Samuel Theobald thought that both powders and solutions may be used with advantage. He had never seen any direct harm follow the use of boracic acid. In cases of suppuration, with a small or moderate sized perforation, he had seen it dry up the discharge and leave the perforation larger than before its use. In such cases he prefers solutions. In acute cases his practice is always to use solutions. He had used a fifteen grain solution with satisfaction. Where the drum-membrane is practically gone, with a granular condition of the mucous membrane the use of boracic acid powder is indicated. He had never found it necessary to pack the canal. One puff of the powder-blower fills the canal sufficiently full.

Dr. Knapp said that in acute suppurative otitis, which is certainly of bacterial origin, he used boric acid largely on account of its drying properties. Suppuration, fermentation, and decomposition do not take place where a part is kept dry. The ear is unfavorable for thorough drainage. As soon as the boric acid becomes moist he has it removed. For acute cases he knew nothing better than this method of treatment.

Dr. Emil Gruening made a few remarks with reference to three cases which he had already mentioned. In these cases he attributed the fatal result to the use of powder, which was boracic acid. The first case, that of a girl, nineteen years of age, had otitis as a result of the use of the nasal douche. She was advised to use powders. In a few days she began to suffer with headache, dizziness, and intense tenderness on one side of the head and slight puffiness in the region of the mastoid. The author saw the patient after she had become comatose. The tympanic membrane was bulging and injected; there was a slight tit-like projection, and in this there was an opening filled with powder. The pus which formed in the middle ear escaped through the Eustachian tube. He made an opening in the membrane and cleaned it out carefully, and advised the family physician to open the mastoid. He did so, and found the mastoid cells filled with pus. The patient recovered consciousness, but died the next day from heart failure. The second case was that of a lady, seventy years of age, who had otitis media with perforation. A powder was applied by a general practitioner, and a few hours later she began to suffer with intense headache. Symptoms of meningitis appeared. There was a small opening in the membrane occluded with powder, an opening was made, but the patient died of meningitis. The third case was that of a child with long standing otitis media, and destruction of both membranes. This is the only case in which the powder had been packed. After the ears had been packed the child had repeated chills. The speaker was called in and removed the plugs, which were hard, concrete masses, and were taken away with difficulty. In spite of the removal of the powder the child died with all the symptoms of pyæmia.

Dr. Roosa thought that in a large percentage of cases acute inflammation of the middle ear is a self-limited affection. He tried to secure cleanliness and then dry the parts. He does not use dryness as a means of destroying the germs or preventing them from acting, for he does not believe in the germ theory of disease. He considers that germs are the products and not the causes of disease, and thinks that they retard the recovery and therefore should be removed. In a large proportion of the acute cases the only treatment required is irrigation with warm water *pro re nata* and drying afterward. He

believes that the pus has a chemical quality apart from the presence of germs, which renders it corrosive. He therefore tried to keep the parts as free from pus as possible.

DR. S. SEXTON thought that it would help in the discussion to consider the kind of cases in which boric acid is useful. Where there is a catarrhal inflammation of the atrium there is generally a profuse discharge which renders it difficult to apply the powder. In the cases referred to by Dr. Gruening, where there is a nipple-like formation, there is little discharge from the atrium. In these cases he makes an early and free opening, and in this way has avoided many of the consequences which are apt to follow in these cases. He makes this opening with a stout tenotome. An opening is made through the membrana flaccida into the attic and through the integument of the upper wall, which usually becomes tumefied.

DR. S. THEOBALD desired to enter a protest against the view that the good effects of boric acid are due entirely to its drying qualities. Some of his most brilliant results have been with the solution of boric acid. He has had cases in which the discharge stopped after a single application of a saturated solution of boric acid.

DR. J. A. LIPPINCOTT, of Pittsburg, considered boric acid a most valuable agent and would not care to relinquish its use. There are, however, certain cases in which, as a result of idiosyncrasy on the part of the patient, the powder acts as an irritant. In the cases reported by Dr. Gruening the fatal results are to be attributed to its improper use. It seemed to him that the dangers of boric acid can be avoided by applying it in the form of a loose powder.

(To be concluded.)

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-third Annual Meeting, held at New London, Conn., July 20 and 21, 1887.

Specially reported for THE MEDICAL NEWS

WEDNESDAY, JULY 20TH—FIRST DAY.

OBITUARY NOTICES.

DR. DERBY, of Boston, read a sketch of the life of the late Dr. Ezra Dyer, of Newport, R. I., formerly of Philadelphia, one of the founders of the Society, and DR. H. D. NOYES briefly referred to the character and work of the late Dr. Wm. S. Little, of Philadelphia.

SIMPLE EXTRACTION OF CATARACT WITHOUT IRIDECTOMY.

DR. C. S. BULL, of New York, reported thirty-six cases of extraction by Daviel's method. The age of the patients ranged from thirteen to seventy-nine years. Of the cataracts 24 were hard, 11 soft, and 1 of traumatic origin. Strict antiseptic precautions were taken both as to operation and after-treatment. Solutions of bichloride of mercury were used for washing the operator's hands and the patient's face, of the strength of 1 : 1000, while a solution of 1 : 500 was repeatedly used to wash out the conjunctiva, and the instruments were left lying in an alcohol bath. The corneal flap was cut with a narrow Graefe knife, and included two-fifths of the circumference of the cornea. Usually the iris did not prolapse. The capsule was then opened with a cystotome, and the lens extracted by manipulation. The iris, if it had prolapsed, was then replaced. Any lens matter remaining in the anterior chamber was washed out by a solution of the bichloride 1 : 10,000; eserine was then instilled into the anterior chamber; the eye covered with sterilized linen and absorbent cotton and bandaged. The bandage was not removed for two days; but the bichloride solution and instillations of eserine were introduced beneath it twice a day. If the eye seemed to be doing well it was not opened until the fourth day, when the bandage was removed for the second time, then replaced and kept on one day longer. The patient was carefully confined to bed, and this was regarded as very important. In 20 cases the iris had to be reduced, but no case of secondary prolapse occurred, and none of suppuration. In the first 30 cases there had been no incarceration of the iris, but this had occurred near the periphery in the last 6. Plastic iritis occurred in 6 cases, irido-choroiditis in 2, in 2 the corneal epithelium was lost some days after the operation, but subsequently regenerated. The average duration of treatment was twenty days. Two required subsequent needling, one the excision of a piece of capsule.

In 20, a central pupil was secured; in 16, pupil displaced. Vision of $\frac{20}{XXX}$ to $\frac{20}{C}$ in 33 cases, of $\frac{20}{CC}$ in 2 cases was obtained. The remaining case had light perception.

This operation preserves the natural appearance of the iris. Central vision is about the same as after the ordinary extraction with iridectomy, and peripheral vision better. There is less liability to the incarceration of the capsule in the wound. But the technique of the operation is much more difficult. This plan of operation is contraindicated by a narrow anterior chamber, fluid vitreous, or rigid iris; and an iridectomy must be made if the corneal incision is too short, or the iris falls before the knife while making it.

PERIPHERIC-LINEAR EXTRACTION WITHOUT IRIDECTOMY.

DR. H. KNAPP, of New York, had made sixty-eight such cataract extractions, beside eight cases in which the operation was attempted but an iridectomy had to be made. The after complications and accidents were mild iritis 3 cases, severe iritis with closure of the pupil 1, protrusion of the iris 3, incarceration 1, capsule-iritis 1, and suppuration 1. The remainder did well. Vision was entirely lost in one case, and was less than $\frac{10}{CC}$ in two other cases. The pupillary area is obstructed by wrinkled capsule quite as frequently as after other extraction operations. In one case prolapse of the iris occurred on the fourth day; in attempting to excise it the prolapse was partially reduced, the reduction was completed, and the eye recovered with a perfectly central pupil. In the case of a man addicted to excessive drinking the eye recovered well with $V. = \frac{20}{L}$. Later, a needle operation was done, and twenty-four hours afterward the patient was attacked with dysentery and acute nephritis. Circumcorneal injection and chemosis appeared, and the eye got very hard. By the third day movements of the hand were alone perceived. An iridectomy was done which cured the eye. On the whole, this method of cataract extraction seems as safe, and on

some accounts preferable to the ordinary method with iridectomy.

ONE THOUSAND SUCCESSIVE CASES OF CATARACT EXTRACTION.

DR. H. KNAPP, of New York, gave a summary of the results in these cases which had been previously reported in series of 100. The results in the different series were, in percentages, given as follows:

Series.	Good.	Moderate.	Failures due to Suppuration.	Other causes.
First . .	70	22	3	5
Second . .	86	12	2	0
Third . .	86	9	3	2
Fourth and fifth	81	7½	8½	3
Sixth . .	89	1	8	2
Seventh . .	88	7	2	3
Eighth . .	90	8	1	1
Ninth and tenth	90½	5½	3	1

In the first series the section was made as far back as possible, and prolapse of the vitreous was frequent. In the third series the technique was considerably improved. In the fourth and fifth, Gräfe's section was practised and a piece of the capsule was removed; and scrupulous care was taken to remove from the pupil all lens substance that was bacteriologically bad by practising manipulation. After this the capsule was opened only at the periphery, and the section shifted into the peripheric circular section of Wecker. In the ninth and tenth series the operation was done with antiseptic precautions. In two cases the other eye had been lost by sympathy. Statistics show that the introduction of Gräfe's extraction reduced the cases of suppuration from ten or twelve to four or five per cent. Suppuration may commence at other points than in the corneal section. Purulent capsulitis frequently occurred in the earlier series. The reader was convinced that all suppuration was connected with the presence of germs, and paid tribute to the late Prof. Horner for his share in the introduction of antiseptic methods in ophthalmic surgery.

With regard to iridectomy, there were certain cases in which it was necessary, and other cases in which it was best.

DOES SUNSTROKE AFFECT THE SIGHT PERMANENTLY?

DR. J. A. SPALDING, of Portland, Maine, introduced the question of the permanent effects of insolation and sunstroke upon vision. So many pension claimants are now coming forward asserting that they suffered from sunstroke, and permanent loss of sight in the army, and finally became more or less blind, that it is quite desirable for the expert in examining such cases, to be supported by greater authority than he is likely to discover in any text-book or accessible literature. In point of fact, there has been reported in the vast extent of ophthalmic literature, but a single undeniable case in which sunstroke was followed by permanent blindness, and six others in which the eyes were ophthalmoscopically examined soon after the attack. In all others optic neuritis was distinctly marked, and in several vision was reduced to a low degree. Yet, ultimately, all six recovered perfect vision without much, if any treatment.

Two or three cases illustrative of the assertions of pension claimants were presented in the paper, and the precise reasons for granting, or not granting, a pension were reported in full. Judging from the history of these cases, insolation had nothing whatever to do with the loss of sight; whilst from historical and scientific records it appears extremely doubtful whether the disease ever has any permanent effect on the sight. The frequent allegations of patients "losing their sight during a sunstroke," or of a dimness coming over their eyes are simply descriptive of the incipient stage of unconsciousness; and are untruthful in a scientific point of view. These recollections become in later years the basis of pension claimants' assertions that their vision was seriously affected by sunstroke. Dr. Spalding expressed the opinion that these were false; and hoped that the members would support expert examiners against the insults of politicians and claimants' friends for refusing to grant pensions for asserted blindness fifteen or twenty years after a sunstroke.

DR. E. JACKSON, of Philadelphia, had found that the diagnosis, in the cases of those now claiming pensions, must be made very much as in the cases of hysterical malingerers. He had once seen permanent impairment of vision after sunstroke. But the impairment came on at once, the history clearly indicating meningitis, both disks presented the appearances of post-neuritic atrophy; and the fields of vision, particularly for colors, were irregularly contracted.

A CASE OF PROBABLE QUININE AMAUROSIS.

DR. D. B. ST. JOHN ROOSA, of New York, reported the case of a lady who had intermittent fever for some weeks during the summer. In October, when apparently well and not menstruating, she was suddenly seized with convulsions and became unconscious. Four, thirty-grain doses of quinine were given per rectum. By the third day she had recovered consciousness. Vision-counting fingers at four feet; papillæ white, retinal surface uneven. She took quinine three times a day; and strychnia was given hypodermatically daily, in increasing doses until the limit of tolerance was reached at one-twenty-fourth of a grain. After seven weeks her best vision, which had at first been eccentric, was centric; enabled her to see large objects at a distance, and small objects near, and to read No. 2 of Jäger's scale. In May, her sight had greatly improved, and later she was seen walking about the city without attendance.

DR. E. GRUENING, of New York, had seen a lady of fifty, who, after one thirty-grain dose of quinine, had remained deaf for twelve hours and blind for twenty-four hours. Five days later, in both eyes, the fundus and central vision were normal, and color perception good. But the fields of vision were greatly limited; extending not over thirty degrees in any direction. Cases of slight quinine amblyopia were rarely recorded.

DR. G. C. HARLAN, of Philadelphia, had seen cases of hysterical amblyopia that resembled the one just narrated.

DR. GRUENING said that the attending physician wrote to him that this patient was hysterical.

DR. ROOSA said that it has not been established to his satisfaction that ischæmia is the primary lesion in quinine amaurosis. Experiments upon the drum membrane of the ear indicate that the primary lesion is not ischæmia, but congestion.

CLINICAL CONTRIBUTIONS TO THE STUDY OF RING SCOTOMA.

DR. SWAN M. BURNETT, of Washington, gave the full histories of two cases of this affection which he had an opportunity of noticing through a period of two years. In only one case was there a history of syphilis, but in both there was choroiditis with vitreous opacities. The gross changes of the choroid, which were found in only one case, did not correspond in any particular with the defect in the visual field. In one case the affection was monocular, there being iritis with adhesions in the other eye. In one case the trouble began as a typical right hæmianopsia, with left semi-annular scotoma. The central clear field, which was more or less oval in form, ten degrees by twenty degrees, was never throughout all the changes essentially diminished in size.

All writers on the subject (a full bibliography was appended to the paper) have placed the pathological process inside of the eye, though in no case were the choroidal changes, manifest under the ophthalmoscope, of a character to justify such a conclusion; and in none have the changes in the visual fields been followed so closely or for so long a time as in these cases; eighteen diagrams of the fields, taken at various times, being exhibited, the course of the nerve fibres in the tract, chiasma, and nerve, as demonstrated by Burrge, Bossius, Samelsohn, Leber, and others, particularly in the somewhat analogous condition of central scotoma; which, in nearly every instance, coincided with the central clear space in these cases, seems to justify the assumption that the fibres supplying the intermediate parts of the retina were hindered in their function, either by a localized neuritis or pressure from adjoining parts.

DR. H. D. NOYES, of New York, had habitually searched for this defect in cases of retinitis pigmentosa. He remembered finding it in one such case, which long remained stationary. Another was a case of a girl of seventeen, previously treated for refractive trouble, who came for pain and dimness of sight in one eye. There were no ophthalmoscopic changes, no local lesion, no brain trouble, or hysteria. Pressing the globe into the orbit caused pain. This was taken as evidence of an orbital neuritis. Complete recovery occurred in two weeks. If systematically looked for, this condition would probably be found to be more frequent than is now supposed.

DR. C. S. BULL reported the case of a man, aged thirty-six, who had fallen when two years old, injuring the right orbit; and again, seventeen years ago, injuring the left parietal region. The second injury had been followed by epileptic seizures which were becoming less frequent. Vision, R. E. counting fingers at two feet, L. E. $= \frac{20}{xx}$ — at the centre of the field. Within two years his condition remained the same.

DR. H. KNAPP had seen one case with neuro-retinitis and ring scotoma. The eye afterward became blind with glaucoma. There were no ophthalmoscopic appearances corresponding to the scotoma. In the other eye there was no change in the retinal pigment, no excavation of the disk, and no scotoma.

DR. W. F. MITTENDORF, of New York, had seen a case in an elderly gentleman with partial atrophy of the nerve. It extended from about five to fifteen degrees. There was no corresponding lesion of the fundus. The scotomata mentioned have been near the centre of the visual field. Recently attention has been called to the existence of ring scotoma near the periphery of the field in glaucoma; on searching for it he had found it once among five or six cases. There was no change in the ophthalmoscopic appearances of that part of the retina.

DR. O. F. WADSWORTH, of Boston, had reported a case affecting one eye, in a man aged twenty five, who had been run over by a wagon. At first there was hemorrhage into the right eye and central scotoma. In a short time the hemorrhage cleared up, and the central became a ring scotoma, with central vision $= \frac{14}{x}$. The zone of blindness was about one and a half feet across at a distance of fourteen feet. This condition remained unchanged for at least two years.

THE SO-CALLED ORTHOPEDIC TREATMENT OF PARALYSIS OF THE OCULAR MUSCLES.

DR. C. S. BULL, of New York, in view of the unsatisfactory results obtained by the use of drugs, and of electricity, had made trial of the method proposed by Prof. Michel; which consists in seizing the insertion of the muscle into the sclera, with a pair of forceps, and dragging the globe alternately in the direction in which the muscle should draw it and in the opposite direction. This was kept up for two minutes at a time, and the sittings repeated daily. Brief abstracts of twenty-one cases were presented with the results obtained. Most of these were palsies of the external rectus of syphilitic or rheumatic origin. The duration of the paralysis varied from a few days to years, some gave histories of previous attacks followed by complete recovery. This plan of treatment seemed to effect a complete cure in eight cases, notable improvement stopping short of complete recovery in six cases, while in seven it proved valueless. Most of the recoveries occurred in recent cases, although in some a cure was effected after the complete failure of drugs and electricity. Without the use of cocaine the pain caused by the operation was quite severe, and even with cocaine it was always entirely painless. Marked conjunctival irritation was caused by the pinching, but this was local and transient.

CASE OF RECURRENT PARALYSIS OF THE MOTOR OCULI.

DR. O. F. WADSWORTH, of Boston, reported the case of one of a pair of twins, sisters, born of healthy parents who had in all seven healthy children. In 1874 when three years old, both had scarlet fever and subsequently discharges from their ears. In 1877 the other twin had headaches and convulsions, and well-marked optic neuritis which passed into atrophy; later the headaches ceased and she continued well. The patient had in 1878 severe headache several hours every week. In 1879 she came for headache which had lasted two weeks of an intermittent character. It began about noon and continued until 3 P.M., then it would intermit until 5 P.M., when it would return and continue four or five hours. R.E. normal and emmetropic, L.E. highly myopic and amblyopic. In March, 1880, there were headache and vomiting and an attack of ptosis with divergence of the right eye. There was now acute inflammation of the left ear. The pain was always in the

right supraorbital region. In February, 1887, she was well, except attacks of headache with ptosis and dilated pupil, which occurred three or four times a year. She was now recovering from one of these, there being oculomotor paresis still present. The interval between the last attacks had been seven or eight months. Each attack was accompanied with a discharge of offensive fluid from the right ear which lasted some days.

March 4th there was much improvement. April 24th there remained slight ptosis, and impairment of upward and downward motion, pupil slightly dilated, and accommodation weak. A large polypus was found in the right ear, which would account for temporary retention of pus. Fifteen cases of this affection had been recorded, but often very imperfectly. The statement was often made, as by this patient, that during the intervals recovery was complete, but in none was it noted that the observer himself had seen such complete recovery. There was no instance of permanent relief; but three deaths. It was difficult to admit that this disease was purely functional or nuclear in its origin. Its origin from disease about the base of the brain was more probable, and this view was supported by autopsies.

LOCALIZED HYPERÆMIA IN MUSCULAR INSUFFICIENCY.

Dr. J. A. Lippincott, of Pittsburg, had seen three cases in which the main complaint was of a congestion of the nasal side of the eyeball. Two of these he narrated. One in a colored barber, aged twenty-four. The congested area was sharply limited, had the form of a pterygium, extended nearly to the edge of the cornea, and involved both deep and superficial vessels, but principally the former. There was frontal headache, and fatigue on working or reading. This had lasted six weeks; and astringents had been used without benefit. The Gräfe test showed decided insufficiency of the internal recti muscles. Strychnia was ordered and in eight days the congestion had greatly diminished and the insufficiency was reduced to one-fourth its former amount. In four days more the equilibrium of the muscles was restored and the congestion and other symptoms had disappeared. The second case, a salesman, aged twenty-nine, came with similar congestion of the nasal side of the globe, of three weeks' standing. He had been reading a good deal at night. Here also there was insufficiency of the internal recti. He was directed to avoid unnecessary use of the eyes, get plenty of sleep, take strychnia, and douche the eyes with hot water twice daily. Following this line of treatment recovery was complete within a month.

Dr. E. Jackson had recently heard a paper read on base-ball pitcher's arm (see The Medical News 'of July 16, 1887), in which it was urged that the disability of base-ball pitchers was caused by exaggeration of the hypernutrition which follows normal fatigue; and that the congestion involves not only the muscles, but their tendons and points of insertion as well. Might not the condition just described be exactly similar, an extension of congestion from the rectus involving the tendon and its insertion in the sclera, essentially a part of the lesion affecting the muscle, and not merely symptomatic?

CASES OF SPECIAL FORMS OF GLAUCOMA, WITH PHOTOMICROGRAPHS.

Dr. William F. Norris, of Philadelphia, reported three cases, and exhibited photomicrographs of the excised globes. The first was an acute inflammatory glaucoma, which yielded to a narrow iridectomy, which was afterward found not to involve the periphery of the iris, the eye remaining quiet for eight years. Then a second attack occurred. Iridectomy could not be performed for many days after the commencement of the attack, when a broad peripheral one was made. But the eye never became entirely quiet. Sclerotomy was subsequently done. Later, intraocular inflammation with hypopyon occurred, and the eye was enucleated; the other eye remaining quiet and serviceable. Section of the enucleated globe showed, in a cystoid cicatrix, the stump of the iris left at the original iridectomy. The scars left by the second iridectomy and the sclerotomy were firmly united. The microscopical examination showed a degeneration of the head of the optic nerve, probably a step toward excavation. There was also a marked proliferation of the neuroglia in the ciliary nerves where they passed through the sclera.

The second case occurred in a lady of seventy, under observation for hemorrhagic retinitis. There were some needles of opacity in each lens. V. = R. $\frac{10}{C}$, L. $\frac{20}{CXX}$. New hemorrhages occurred in the right eye; vision still further obscured, and the globe hard. An iridectomy was done, the anterior chamber filling with blood during the operation. On the fourth day, and again on the ninth, there occurred renewed attacks of pain and further impairment of vision, apparently due to intraocular hemorrhage; by the twenty-fourth day light-perception was lost. Three days later, an attempt was made to do a neurectomy on the eye; but there occurred such profuse hemorrhage into the capsule of Tenon that it became impossible to replace the globe, and it had to be enucleated. The left eye, which had regained V. = $\frac{20}{LXXX}$, slowly grew worse until the patient died, two years later, of apoplexy. The microphotograph showed hemorrhages into the retina, and also into the sclerotic near the canal of Schlemm. It was notable in this case that retinal hemorrhage was the immediate cause of the attack of glaucoma, and that hemorrhage into the capsule of Tenon prevented the completion of the neurectomy.

In the third case, a successful cataract extraction had been done ten years before; the patient being afterward able, with glasses, to do laboring work. After eighteen months, a needle operation was done on that eye, and from that time it refused to become quiet. Subsequently it became hard, and was enucleated for sympathetic irritation of its fellow. Each end of the scar of the periphero-linear incision presented a cystoid cicatrix.

The photomicrographs of these cases all showed the imperfect approximation of the lips of the wound from the overriding of the corneal flap, An examination of Becker's plates showed the same overriding in the majority of cases; in but two was the approximation nearly accurate, and in two the overlapping was the other way. This seemed to show the need for quiet of the eye and quiet of the patient until the corneal union was firm, after iridectomy or cataract extraction.

Dr. H. D. Noyes said that in a case reported last year, dying on the fifth day, perfect approximation was prevented at one end of the incision by swelling of the scleral lip of the wound, which was double the thickness

of the cornea [illegible]. Into the space so left the iris had been forced, thus illustrating the beginning of a cystoid cicatrix.

DR. H. KNAPP asked whether the swelling of the scleral lip might not be due to the previous incarceration of the iris in the wound.

DR. NOYES believed that the use of the spatula in dressing the wound had left it free from iris.

DR. B. A. RANDALL said that in Dr. Noyes's case the anterior chamber must have been obliterated and the posterior capsule pushed forward, for the sections showed pigment attached to the posterior capsule.

SARCOMA OF THE EYELID, SIMULATING MEIBOMIAN CYST.

DR. B. A. RANDALL, of Philadelphia, presented the notes of such a case occurring in a man of forty-one, who came under his care in 1885, with the history of two operations, in the three previous years, for the removal of a cyst. The tumor had the position, size, color, and apparent fluctuation of a chalazion; but a vague grayness suggested pigmentation, and led to its removal by a V-shaped incision through all the tissues of the lid. Section proved the tumor to be a solid encapsuled sarcoma of large spindle-cells. The patient passed out of sight for two years, and then returned with a recurrence very like the original, which had also been treated in the interim as a chalazion. The outer half of the lid had now to be removed, and the tumor was found to be of the same nature as before, and again encapsuled. The Meibomian glands each time seemed normal, and the tarsus was entirely uninvolved.

SOME CASES OF CILIO-RETINAL VESSELS.

DR. B. A. RANDALL also presented sketches of the ophthalmoscopic appearances in some cases of this anomaly, and showed a photomicrograph of such a case from the collection of Prof. Norris. He remarked that such cases are far from rare, and that the occurrence of such an origin of even a principal artery or vein, supplying sometimes two different quadrants of the retina, had come to notice. As to the origin of these vessels, in two cases they could be distinctly seen to join the network of the choroid. The reported cases, anatomically examined, had been seen to arise directly from the short ciliary arteries, as in the photomicrograph shown.

THE HOHLSCHNITT OF V. JÄGER IN THE EXTRACTION OF CATARACT.

DR. RANDALL called attention to this operation as differing from the modified linear extraction only in the knife with which it is executed. To this knife he asked attention, with the claim that with it almost all of the usual modifications of the linear extraction can be made; but that no aqueous need be lost until the completion of the incision, and that consequently the cut can be made more safely and smoothly than is possible with the Gräfe knife. As illustrative of the perfection of the healing, he demonstrated a photomicrograph of a *hohlschnitt* executed by v. Jäger himself, which he had cut in Prof. Arlt's laboratory, about a year after the operation.

DR. KNAPP had used Jäger's knife, but thought it harder to manage because of its greater size. With the Gräfe knife one can withdraw slightly and rectify any mistake in the position of the counter-puncture.

DR. H. D. NOYES agreed with the last speaker as to the superiority of the Gräfe knife. He had long practised a manœuvre, which he found Panas also employed; after making the counter-puncture, the handle is rather depressed, so as first to make the portion of the section adjacent to the counter-puncture. This quickly carries the cutting edge of the knife to the border of the anterior chamber, where the iris can no longer fall before it. Then the handle of the knife is raised as the section is completed.

DR. S. THEOBALD, of Baltimore, thought the greater convenience of the narrow knife due to the fact that with it we can first make the counter-puncture, and afterward complete the section; with the broad knife both must be done at once.

DR. RANDALL said that if the puncture is made right, with the knife in the proper position, the counter-puncture must of necessity be right also; and the incision made is perfectly smooth.

DR. KNAPP thought that a broad knife acts more as a chisel, tending to push the cornea before it.

DR. E. GRUENING was of the opinion that the difficulty about making a counter-puncture is that its location is not seen; and when an attempt is made to correct its position, aqueous escapes and the iris is apt to fall before the knife.

(To be concluded.)

AMERICAN NEUROLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Long Branch, N. J, July 21, 22, and 23, 1887.

(Specially reported for THE MEDICAL NEWS.)

WEDNESDAY, JULY 20TH.—MORNING SESSION.

DR. CHARLES K. MILLS, of Philadelphia, the retiring President, in a few remarks presented DR. LANDON CARTER GRAY, of Brooklyn, the President-elect.

DR. E. C. SPITZKA, of New York, read a paper on

SOME POINTS REGARDING THERAPEUTICAL AND OTHER INJURIES OF THE BRAIN.

In the course of certain experimental injuries undertaken between eighteen and three months ago, he made some observations which appeared to be novel. The experiments varied from the excision of an entire hemisphere, simple trephining and the introduction of foreign substances into the arachnoid cavity, to the injection of substances into the brain tissue directly, into the ventricular cavities, and into the arachnoid sacs at the base of the brain. Trephining necessarily preceded the introduction of the hypodermatic needles in the latter instances. He witnessed in one instance an extensive operative exposure of the human brain, and made the post-mortem analysis in two cases where operations had been attempted or made in accordance with the modern teaching of cerebral surgery. The results to which he especially directed attention, are those relating to the healing of wounds made by hypodermatic needles and trocars.

He held that in young persons, even under discouraging circumstances, as wounding of the dura by the saw, the dura makes successful efforts to agglutinate the removed button and restore the integrity of the calva-

rium. In connection with a number of cases where trephining was practised, he had found that the larger the opening the less is the probability of protrusion of the brain.

The observations made with hypodermatic and other needles on the brains of dogs, relate to these points.

First to the formation of cerebral abscesses at points remote from the point of injection of septic material. His experience with animals would seem to indicate an enormous individual difference. On the one hand, coarse needles have been inserted, coarse substances injected, the animal killed after a month, and not the slightest trace of the channel or the point of penetration found. On the other hand, comparatively innocuous substances have been injected with fine needles, and, the animal being killed after a year, the tract of the needle found as fresh as if it had been made a few hours before.

From his limited experience with the human subject and observations in experimental pathology, he drew the following conclusions:

1st. That exploratory needles should never be introduced into the internal capsule, the contiguous ganglia or lateral ventricles, merely for exploratory purposes unaided by positive clinical indications of the location of disease.

2d. That exposures of large surfaces of the brain are not feasible in persons with feeble vascular walls, owing to the dangers of intracranial hemorrhage.

3d. That buttons which have been reinserted under aseptic precautions are, even in the event of non-union, entirely harmless.

4th. That in young persons buttons of bone may become reunited to the calvarium even though perfect coaptation be not assured.

He added that he has very recently experienced how desirable it is that in the event of trephining for the relief of cortical irritation, that on removal of the latter the button of bone be replaced.

DR. G. HAMMOND thought that in all cases of trephining the button of bone should be reinserted; and he quoted a successful case of Dr. Weir, in which a large piece of bone had been removed, and afterward reinserted with the most desirable results; the portion replaced having united firmly to the calvarium.

DR. LLOYD asked if Dr. Spitzka had ever punctured the brain of a child for hydrocephalus; as some time ago he had a patient brought to him for this purpose.

DR. MILLS thought it perfectly right in some cases to reinsert the button of bone, but, at the same time, the condition of the dura must guide us in the matter, as to the extent of inflammation exhibited; he quoted one case in which the piece of bone removed was three by four inches, but there was a central depression in the bone removed, and it was deemed necessary, in order to insert the bone, that this depressed portion be removed; the bone, however, was not replaced. In regard to the remark made by Dr. Spitzka, as to the animal brain being more resistant after surviving the first operation, that had been corroborated by his own experience. He mentioned a case in which the portion of bone removed was the largest he had ever seen, accompanied also with considerable loss of blood; the patient made a good recovery after the operation, but afterward died from pneumonia.

DR. SPITZKA said that in those cases in which it was not deemed advisable to reinsert the bone, he believed that the method of sprinkling the exposed surface of the dura with bone grafts was advisable, and he thought that even should a bone graft drop into the brain substance, it would do no harm, as the bone dust in trephining in some cases has caused no disturbance. As to the question asked by Dr. Lloyd as to puncture of the brain for hydrocephalus, he would not hesitate to insert a large trocar into the brain substance, although he had not performed the operation, he had seen Dr. Detmold do it, and he had himself tapped large tumors of the brain with the most satisfactory results.

DR. JAMES J. PUTNAM, of Boston, presented the

NOTES OF A RARE CASE OF DYSTROPHY OF THE FACE AND HEAD.

The case was one probably of hyperostosis of the cranium, occurring in a young woman twenty-one years of age. Her health was apparently good, and there was no history of syphilis; her mother, however, suffered with her head. The first symptoms were severe, and intense pains in her head, enlargement and protrusion of the eye were first noticed about two years after the beginning of the headache. Three years ago her teeth began to fall out, and at the time he saw her she had but one remaining tooth. Two years since, a purulent discharge from the ears appeared, and she could not distinguish the sound of a tuning-fork. Two years after the onset of the symptoms she had a miscarriage, and one year later menstruation ceased. There was œdema of the left eyelid, the eyes were extremely protruded, so that more than half the globe projected; there was no evidence of any paralysis of the nerves, except that the tongue moved slightly to one side. There was a well defined opacity in the upper cortical lens of the left eye, which may be of importance.

DR. PUTNAM then made a few remarks upon a case of

SARCOMATOUS TUMOR OF THE BRAIN

attached to the sphenoid bone. The patient had had attacks of periodical headache eighteen months previously, which he thought might be ascribed to this cause. During the time he had seen her she suffered from intense headache and neuritis, and then eventually a slight degree of facial paralysis on the opposite side; in the last two months she had complained of the two middle fingers of the left hand on the side of the tumor. At the autopsy the brain exhibited a shining black mass, representing a flattened tumor. This contained blood with a small number of cysts, and in spite of the remarkable pressure they produced, no distinctive symptoms presented themselves until within the last two months. It is an interesting surgical question as to whether in this case an exploratory operation would not have been justifiable.

DR. SPITZKA remarked that in one case where the numbness occurred in the fingers as mentioned by Dr. Putnam, a tumor had been discovered in the brachial region.

DR. PUTNAM said the autopsy was confined to the head alone. He thought Dr. Spitzka's remark just; as he could call to mind a case in which a tumor of the brain was pressing on both hemispheres and which presented no symptoms but pain and numbness in one

wrist; but in the case first mentioned the pain was not in the ulnar nerve, it was only in the two middle fingers. He said that Charcot had noted the same thing many years ago.

AFTERNOON SESSION.

DR. C. L. DANA, of New York, read a paper on

HEREDITARY TREMOR.

DRS. PUTNAM and DERCUM mentioned cases coming under their notice with the same symptoms described.

DR. HAMMOND asked Dr. Dana if he considered this the only form of hereditary tremor, he remembered a case in which the patient could not sit in a chair; his affection was similar to chorea in its manifestations. He could only trace it back to the mother in this instance, his brother and sister had it, and also a niece, it did not appear in this man until he was thirty-five years old, and toward the end of his days mental failure, delusions, hallucinations, etc., set in.

DR. DANA replied that the tremor he had described in his paper was by no means rare and he was surprised that it was not mentioned in our literature.

DR. GEORGE W. JACOBY, of New York, read a paper on

MICROSCOPICAL STUDIES IN A CASE OF PSEUDO-HYPERTROPHIC PARALYSIS.

From his investigations, if he might draw conclusions without at the same time generalizing, he should in a measure differ from some observers, being convinced that in many patients the disease is essentially a chronic inflammation invading both the perineurium and the muscle tissue. He considered it impossible to say what the cause of this process might be unless sought for in a congenital malformation of the muscle tissue itself, such malformation being indicated by the small size of the sarcous elements, as we are accustomed to see them in the earliest stage of embryonal development.

But, however this might be, the pathological process consists of a gradual reduction of the muscle fibres into medullary or inflammatory corpuscles, which, in turn, go to build, partly fibrous, partly cartilaginous, and partly fat connective tissue. The process, which is extremely slow, gradually leads to an augmentation of myxomatous or other varieties of connective tissue at the expense of the muscle tissue. He placed the whole process, as seen in his specimens, in the same category with the process termed myositis ossificans progressiva; had he to describe it in a few words he would call it a *myositis progressiva hyperplastica*.

DR. DERCUM stated that he had examined some typical cases last fall occurring in the adult. Also a case in which there were some signs of inflammatory changes in the corpuscles and connective tissue element, in these cases there was a myositis, interstitial myositis, but whether it was secondary to the myositis proper it was difficult to say.

DR. SACHS, of New York, presented a paper on

ARRESTED CEREBRAL DEVELOPMENT WITH SPECIAL REFERENCE TO ITS PATHOLOGY.

He reported a case of a child which was perfectly formed in its limbs; before birth, however, the mother was thrown from a carriage. There were symptoms also of mental weakness on the side of the parents. The child would lie on its back and never attempt voluntary movement; objects placed in its hands would fall out; as it grew mental vigor did not increase, and finally total blindness set in. The child never uttered a sound except a low gurgling noise if left alone. There was no rachitis, no history of syphilis, and the child finally died from pneumonia. At the post-mortem the skull was found to be thickened and a large clot in the longitudinal sinus, the brain weighed two pounds, and the bloodvessels appeared to be normal.

DR. AMIDON had seen two cases very much like this in which there was no lesion apparent, but there were signs that hemorrhage had occurred some time before. He thought hemorrhage might occur without leaving any trace at the autopsy, and he asked Dr. Sachs whether it occurred to him that it might have been the same in his case.

DR. SACHS thought that if hemorrhage had occurred there would be thickening of the cortex. The child at birth was brighter than later on in life. He did not think the condition was owing to traumatism, but rather that the general circulation and nutrition had been disturbed.

(To be continued.)

CORRESPONDENCE.

THE NEW YORK STATE BOARD OF MEDICAL EXAMINERS.

To the Editor of THE MEDICAL NEWS.

SIR: A law of 1874 established for the State of New York a State Board of Medical Examiners. Frequent deaths and occasional resignations changed its original membership several times, until, upon the recommendation of the undersigned (who therefore objected repeatedly to his own appointment) and for reasons easily understood, all the members of the present Board, with one exception, were selected by the Honorable the Board of Regents of the University of the State of New York, from amongst the medical men of Albany, the seat of the government and the Board of Regents.

The profession never expected the law as it was passed in 1874 to be efficient. It was believed by many that some of the medical colleges objected to the establishment of a State Board altogether, though others were known to favor it. It was certain that sectarian influences succeeded in undermining the passage of the original bill and emasculating it. *It is certain* that no State Board of Examiners will ever benefit either the profession or the public, both of which stand in equal need of it, before the license to practise medicine will depend on the *compulsory* passing of a successful examination before the State Board. As the law stood, nobody ever applied for examination and the degree of M.D. of the University of the State of New York, who was in the possession of a diploma from a college in good standing. Such few as volunteered to come forward, were men who had previously failed in their college examination, or "practised medicine" without study, knowledge, or any title whatsoever. There being no rules and regulations referring to a minimum of accomplishments or requirements, a few of these were let loose upon the unsuspecting public with a diploma; the majority, however, failed.

When the new Board was appointed in the beginning

of this year, its members accepted their positions upon the condition that the Board of Regents would authorize a number of rules and principles which were to regulate the examinations, and the granting of degrees. As they have been approved by the Regents, I am directed by the Board of Examiners to present them to you for your information, and, if you deem proper, for publication and comment. We know quite well that, as long as the examination by the State Board is not made *compulsory*, any number of rules and principles will prove their inadequacy and inefficacy again and again. But the present Board hopes that its earnest recognition of the rights and dignity of medical science, art, and practice will be admitted by, and found acceptable to the profession, and that the latter, after a minimum of requirements for the admission into the ranks of the profession has been officially accepted by the Regents, will feel encouraged to continue its exertions in behalf of both the elevation of the standard of medical education and the protection of the public.

Not one of the recent applicants for a degree has proved successful. One of them had failed in his college examination a few weeks previously, and now threatens to swell the number of graduates of the "University" of a neighboring State.

Very respectfully,

A. Jacobi, M.D.

110 West 34th St., New York,
July 25, 1887.

Rules for Examination.

The members of the State Board of Medical Examiners accept their positions with this understanding:

A candidate for the degree of Doctor of Medicine to be given by the Board of Regents, either desires an additional degree after he has received his diploma from a chartered medical college, or he has no diploma from any chartered medical college, and desires or prefers one from the Board of Regents. The degree given by the Board of Regents is to be, or become, an honorable distinction. It must be the object of the law to protect the people and to ennoble the medical profession, and not to facilitate the entrance into it of persons unfit or unqualified. The profession does not require larger numbers, but does insist upon an elevated standard. Therefore the examination must be strict, and must be conducted according to the following rules:

1st. The examinations before this Board shall be conducted in the English language exclusively.

2d. The candidate shall be allowed two and a half hours for each examination. The examination shall be in writing. The candidate must not consult books, extracts, notes, or persons, and must not communicate with any one during the two and a half hours allotted to him. To do so is to be considered a failure to pass.

3d. The examination in clinical medicine and in clinical surgery shall consist in the actual examination of patients by the candidate, and a discussion in regard to the diagnosis, prognosis, and treatment of the cases.

4th. The examination in chemistry shall include the actual testing of a specimen of urine, in regard to its reaction, specific gravity, and the presence or absence of albumen and sugar.

5th. Each Examiner shall have the privilege, if he so desire, of supplementing his written examination by an oral one, in the presence of two other members of the Examining Board.

6th. The scale of marks shall be from zero to ten; ten being perfection, and anything below six being a failure to pass the examination.

7th. The questions and answers with their marks shall remain in the possession of the Board of Regents, and shall be open to inspection.

8th. When the candidate shall have completed all his examinations, the Board of Examiners shall meet and hear the result of the examination in each branch. And within ten days thereafter, each member of the Board shall make a written report as to the merits and acquirements of the candidate; being guided in this report, not alone by the result of the examination in his particular branch, but also by the result of the examinations in the other branches. And each member of the Board shall send his report, together with the questions and their answers and their marks in his branch, to the Secretary of the Board of Examiners; to be by him transmitted to the Secretary of the Board of Regents.

And furthermore it is the opinion of the Board of Examiners: that in order to receive the degree of Doctor of Medicine, the candidate should successfully pass in every branch; or at least in every branch but one.

State Board of Medical Examiners.

President, Abraham Jacobi, M.D., Examiner in Pathology.

Vice-President, Albert Vanderveer, M.D., Examiner in Surgery, and Clinical Surgery.

Secretary.—Henry Hun, M.D., Examiner in Clinical Medicine, and in Materia Medica and Therapeutics.

James P. Boyd, M.D., Examiner in Obstetrics.

Franklin Townsend, M.D., Examiner in Physiology.

Samuel R. Morrow, M.D., Examiner in Anatomy.

William Hailes, Jr., M.D., Examiner in Histology.

Willis G. Tucker, M.D., Examiner in Chemistry.

NEWS ITEMS.

Nova Scotia Medical Association.—The nineteenth annual meeting of this Association was held at Truro, N. S., beginning July 6, 1887.

The following officers were elected for the ensuing year:

President.—Dr. William McKay, M.P.P., of Reserve Mines.

Vice-Presidents.—Drs. D. A. Campbell, of Halifax, and W. B. Moore, of Kentville.

Secretary and Treasurer.—Dr. W. S. Muir, of Truro. Digby was chosen as the place of meeting next year.

Gaseous Enemata in Bellevue Hospital.—The use of these enemata has been entirely abandoned in the fourth division, Bellevue Hospital, where they have been earliest and longest tried.

A Sanitary Congress in South America.—The Peruvian government has invited the republics of Central and South America to coöperate in the formation of a sanitary congress to be held at Lima, November 1st.

It is a significant sign that these governments, so sorely tried by the hardships accompanying contagious diseases, are at last awakening to the importance of undertaking preventive measures.

FREE COMPETITION FOR POSITIONS IN THE HOSPITALS OF NEW ORLEANS.—Dr. Joseph Jones, of New Orleans, introduced at the recent meeting of the Louisiana State Medical Society, a resolution calling upon the Legislature to repeal the law of 1885 excluding all medical students from competition for the position of resident students of the Charity Hospital, except native and residents of Louisiana.

AN HONOR DECLINED.—PROFESSOR GAIRDNER, of Glasgow, has declined the honor of knighthood offered him on the occasion of the recent jubilee of the Queen.

BROMIDIA.—The United States Circuit Court has granted a perpetual injunction restraining the publication of a formula for a liquid medical preparation under the name "bromidia," unless there is also published, in connection with the said words "bromidia," or "bromidio," a statement that the preparation covered by the said receipt is put up and sold by Battle & Co., of St. Louis, under the trade-mark "Bromidia."

LEAD POISONING FROM HATBANDS.—Dr. Joseph F. Gerster, in the *American Grocer*, describes a case of poisoning from wearing a hat with sweat-bands colored with lead. The chief symptom was headache. It is not uncommon to use lead in preparing the leather for sweat-bands, but there is rarely any dangerous amount.

ANALYSES OF MILK SOLD IN NEW YORK.—The *World's* analyses of milk sold in New York City and consumed by the defenceless babies of the metropolis, shows over one-quarter of the samples examined to have been skimmed or watered. The advisability of permitting skimmed milk to be sold if the receptacles from which it is sold are marked to that effect, has been discussed freely, but the board of health is of the opinion that its sale should be entirely prohibited. The sale of milk is one of the most perplexing things to control which a board of health is compelled to meet. Its sale is carried on by such a multitude of people for a short portion of the day only, and it is delivered in such small lots that interference with it can be but infinitesimal at best. Dealers should be taught to look for inspection any time, and caused to fear the subsequent publicity which should follow detection. In that way the fraudulent substitution of skimmed milk for milk of legal standard may be lessened. Another good plan would be for every purchaser to inform his milkman that it is proposed to have a sample of the milk submitted to the health authorities for examination. This would put the dealer in the way of delivering a better article.—*Sanitary News*, July 9, 1887.

IN MEMORY OF DR. J. C. HUTCHISON.—At a special meeting of the Board of Managers of the Alumni Association of the Long Island College Hospital, held July 20, 1887, convened to take action in the matter of the death of Joseph C. Hutchison, M.D., LL.D., late president of the Collegiate Department, the following preamble and resolutions were adopted.

Whereas, In the death of Joseph C. Hutchison the College has lost an able worker, in his recent official capacity, and one to whom it was indebted for a more active part in the past as professor of surgery, and believing the reputation and honor of the institution rest in the hands of its teachers, it is

Resolved, That one who showed such boldness and fidelity in defending its best interests, is worthy the highest praise and respect of this Association.

Resolved, That the Association extends its heartfelt sympathy to the family of the late Dr. Hutchison, and its condolence to the Board of Regents of the Long Island College in this our common affliction.

Resolved, That a copy of these resolutions be sent to the family of Dr. Hutchison, the Board of Regents, and the press.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JULY 19 TO JULY 25, 1887.

HEGER, A., *Lieutenant-Colonel and Surgeon.*—Assigned to duty as member of the Army Retiring Board, convened at Governor's Island, New York Harbor, N. Y., vice Colonel Charles Sutherland, Surgeon, hereby relieved.—*S. O. 167*, par. 13, *A. G. O.*, July 21, 1887.

By *S. O. 102*, par. 13, *A. G. O.*, July 15, 1887, so much of par. 1, *S. O. 150, c. s., A. G. O.*, as directs *Captain and Assistant Surgeon* JOHN DE B. W. GARDINER, U. S. Army, to report for duty at Fort Washakie, Wyoming, is revoked.

COWDREY, S. G., *Captain and Assistant Surgeon.*—Granted one month's leave, to take effect on or about July 24th.—*S. O. 79, Department of Texas*, July 13, 1887.

BARNETT, R., *Captain and Assistant Surgeon.*—Sick leave still further extended six months, on account of sickness.—*S. O. 162, A. G. O.*, July 15, 1887.

By *S. O. 162*, par. 43, *A. G. O.*, July 15, 1887, so much of *S. O. 150, c. s.*, par. 1, *A. G. O.*, as relieves *Captain and Assistant Surgeon* GEORGE H. TOMEY U. S. Army, from duty at Fort Monroe, Virginia, is revoked.

TAYLOR, A. W., *Captain and Assistant Surgeon.*—Now at Fort Laramie, Wyoming, is ordered for temporary duty at Fort Robinson, Nebraska.—*S. O 162, A. G. O.*, July 15, 1887.

BLACK, C. S., *First Lieutenant and Assistant Surgeon.*—Ordered for duty as Post Surgeon, Fort Bliss, Texas, during the absence on leave of Captain S. G. Cowdrey, Assistant Surgeon.—*S. O. 79, Department of Texas*, July 13, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING JULY 23, 1887.

FESSENDEN, C. S. D., *Surgeon.*—Granted leave of absence for thirty days, on account of sickness, July 18, 1887.

MEAD, F. W., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, July 19, 1887.

YEMANS, H. W., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, July 23, 1887.

BROOKS, S. D., *Passed Assistant Surgeon.*—Promoted and appointed Passed Assistant Surgeon from July 1, 1887. July 21, 1887.

WHITE, J. H., *Assistant Surgeon.*—To proceed to Washington, D. C., as escort to an insane seaman, July 18, 1887. Ordered to examination for promotion, July 23, 1887.

WATKINS, R. B., *Assistant Surgeon.*—Leave extended fourteen days, on account of sickness, July 20, 1887.

MAGRUDER, G. M., *Assistant Surgeon.*—To proceed to Galveston, Texas, for temporary duty, July 21, 1887.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

ON HORNY GROWTH OF THE PENIS.[1]

BY JOHN H. BRINTON, M.D.,

PROFESSOR OF PRACTICE OF SURGERY AND CLINICAL SURGERY IN JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

JOHN B., aged sixty-two, a farmer, presented himself at the clinic of the Jefferson Medical College, on the 8th of October, 1886. He stated that he had upon his penis a horn, which had existed for more than four years, and which had originally grown from a wart. The wart was of some size, and at times itched greatly, and he was in the habit of rubbing it to relieve this disagreeable sensation. All that he could say of the growth was that the wart gradually turned into horn which slowly increased in size. It was, however, painless, and caused him no trouble, except that it mechanically interfered with coition.

On examination, a large, horny growth was found springing from the base of the glans, at the coronal border, and firmly attached both to the gland and to the prepuce. The horn was one and seven-eighths inches long, one and three eighths in circumference at its base, and curved forward, tapering slightly, beyond the extremity of the glans. On the dorsum (Fig. 1), half an inch in front of the corona, a

FIG. 1.

plate of horny tissue, varying in width from three-quarters of an inch to an inch, encircled the end of the glans, covering and destroying the frenum and its attachment, surrounding the meatus, and narrowing it to a pin's point; through this narrowed opening, impervious to any instrument, the urine escaped slowly, drop by drop. This plate of horn presented a longitudinally striated surface, somewhat like that of an uneven or exaggerated thumb-nail, and having, when dry, a smooth and polished appearance.

FIG. 2.

The under surface (Fig. 2) of the horn and of the horny plate, seen when the penis was laid against the belly, was uneven and jagged, seemingly composed of bundles or spiculæ of horny tissue, separated, and somewhat resembling short bristles. After amputation of the glans behind the corona, a No. 1 catheter could easily be passed along the urethra from behind, until abruptly stopped by the plate of horn above referred to. The corpora cavernosa were found to be normal.

The extent of the disease was so great, and the involvement of the urethra so complete, that amputation was considered to be indicated. The glans was therefore removed by an incision just behind the corona. The patient recovered rapidly, and was discharged from the hospital on November 2, 1886.

The microscopical examination of this growth was kindly furnished to me by Dr. Morris Longstreth. The first part examined, taken from the middle portion of the horn, appeared, when disintegrated with caustic potash and mounted in glycerine, to be composed of epithelial cells of the usual squamous variety. These cells were dry, shrivelled, closely packed, and difficult of separation, even more tightly united than in the structure of living nail. This general condition was more marked in the outer or external portions of the horn. In the flat or nail-like portion covering the dorsum of the glans the same cells were found, but they were more easily separated, individually less shrunken, and corneous in appearance, and many of them showed abundant granular contents. In short, no essential difference existed in the arrangement or character of the cells of the horn proper, and of the lamellar or nail-like, horny plates covering the glans. The seeming differences were of degree rather than of kind.

[1] Read before the Association of Genito-Urinary Surgeons, at the Annual Meeting at Lakewood, N. J., May 19, 1887.

The rarity of horny growths upon the penis is somewhat remarkable, and one is surprised to find only fourteen cases accurately recorded in English, German, and French reports. A few more instances are vaguely alluded to, but in such uncertain terms as to render them worthless for study. Confining ourselves, therefore, to the trustworthy descriptions of this affection which have reached us, we find, on comparison, a singular uniformity in their description.

Horns upon the penis occur in two forms. In the first, as well-marked, projecting horns; in the second, as rough, flattened, horny plates of greater or less thickness, occupying the surface of the glans penis. In several instances, as in that before us, both of these varieties are present. Where well-marked horns exist on the penis, their bases of attachment are usually the corona, the sulcus coronalis, or the mucous surface of the prepuce. These horns, at first sight apparently single, are often multiple, one horn predominating in height and size, while a range of very much smaller like growths extend laterally along the corona. The inguinal glands are frequently affected.

As to the age at which these developments take place, it would seem that they are most frequent in advanced life, from fifty to seventy years, or even later. In the case reported by Dr. Jewett, of Connecticut, in which the horn—the largest on record—was three and a half inches long, and three-quarters of an inch in diameter, the patient was twenty-two years of age. In the case reported by Pick, of Prague, in which the horn was two and a half inches long, the patient was also twenty-two years old. In one instance observed and figured by Demarquay, the age of the patient was nineteen and a half years.

These penile projecting horns are usually curved, and project over, or to the side of the glans, are truncated toward the extremities, and are striated or corrugated longitudinally, with a tendency of the fibrillæ to separate, or split lengthwise. In color, they vary from a whitish or ash-gray to a yellowish-brown, or black. They are most often painless, but by their growth, as one might naturally infer, at first mechanically interfere with, and as they increase in size later, prevent coition.

It is difficult to understand the causes, generally, of cutaneous horns; indeed, Hebra has remarked that it is scarcely necessary to study those causes which, so far, are clear to no one. Hartman characterizes their origin by the phrases "Lusus naturæ," and "nisus exrescendi." Yet so far as horny growths from the penis are concerned, it would seem that they may be caused by the irritations peculiar to their site. Thus, it will be seen by reference to the appended cases, that in many of them an actual source of local irritation existed. Thus, in six out of the fourteen, phimosis, either congenital or acquired, was present, and the horny growths usually supervened upon the operation for the relief of this condition. We have then the irritation of the deformity, the accumulating secretions and filth, and the irritation of the operation, surely enough to give rise to a papillary hypertrophy, sufficient for the development of flattened or horny growths, or protuberances. In other cases, the horny growths on the penis have followed, or been coincident with an epitheliomatous condition, and in nearly every instance have been preceded by a wart, accompanied by more or less itching. In some instances, the removal of the horns has been followed by the occurrence of epitheliomatous growths.

It will thus be noticed that in all the fully recorded cases there is a general, and, indeed, a strong family likeness as to origin and development of the growth in question. In the case I have reported, there is one peculiarity which I have not noticed in the other instances. It is this, that the anterior one-fourth of an inch of the urethra of my patient was almost entirely occluded by the horny formation, so as to a great degree to interfere with micturition. By examination of the specimen, this horny structure will be found to be abrupt, the normal calibre of the urethra being preserved until sharply arrested by the horny plate involving the meatus.

The *treatment* of these cases may be summed up in two words—thorough removal. If the horn be single, and its attachment be circumscribed, this can be done by including in the incision a sufficient amount of soft tissues. When, however, the base of the horn is broad, when it has extended widely, or is accompanied by epitheliomatous formations, or when the urethra is surrounded, and is constricted and compressed, it would seem better, particularly in old men, to remove the entire gland.

Appended will be found references to all cases of horny growths on the penis I have been able to collect

Case I.—Caldani (*Memoria della Soc. Italiana*, F. xvi. p. 125; *Meckel Archiv.*, 1851, p. 301. Lebert, Ueber Keratose, Breslau, 1864, p. 47). A man, aged seventy, previously healthy, experienced a sudden violent itching on the outside of the right varicose leg, which he scratched until it bled. Œdema and ulceration followed, here and there, which were healed at the expiration of two years. Soon after violent itching between gland and congenitally phimotic prepuce occurred, which in his efforts to assuage, he rubbed to bleeding. After some months, a soft, sensitive mass projected from the preputial orifice; the prepuce was slit up, the cancer-like mass removed, with a small portion of the glans, and then the entire prepuce was cut away, and the wound healed in a month. Three days after operation at the incised portion of the glans, a small, hard projection appeared, which was cauterized on the fourth and fifth days by the hot iron. It disappeared, and on the eighteenth day, on the same place, two other raised spots developed. These, and a third unusual growth, evident two days later, were cauterized, and the patient left the hospital fully healed. Five days afterward, in the centre of the scar, a white, hard, insensible body appeared, which in ten months developed into a large horn, bending over the end of the glans, in front of the meatus. The reporter adds that the after-march of this case, and its termination are unknown.

Case II.—A. Richond-Desbrus (*Archiv Gén. de Méd.*, 1827, t. xv. p. 218. Quoted by Lebert, p. 48). A patient, sixty years of age, in 1825 presented for treatment. His glans penis was greatly swollen, covered with enormous, irritable bleeding vegetations. His prepuce, slit by a previous operation, was also tumefied, hardened, and covered by foul growths. The glans was covered with a black crust, and beneath this the glans

had degenerated into a white velvety tissue, which bled readily. He had never had any venereal affection. The vegetations and remainder of prepuce were removed, and surfaces cauterized. Fifteen days afterward the vegetations had returned, but operation was refused. In the next year he again presented himself; an enormous horn had now developed from the glans, similar in form, consistence, and color, to the other horn. On being burned, the odor was that of ordinary horn. Its external surface was hard, but the interior layers were friable and porous. The glans was twisted to one side, and urination was difficult. The centre was filled with a hardened caseous matter. The lymphatics of the right side were enlarged. Three months later, the irritation passed to the acute stage, the prepuce became red, hard, painful, and suppuration was established. Amputation was advised; he went up to Lyons for operation, and the reporter learned nothing further of his case. Of this patient, Lebert observes that "he probably suffered from cancroidal epithelioma of the glans, with horn complication, and that already a bubo, probably also of epitheliomatous character, existed, the issue of which is fatal. Had the patient been cured, the fact probably would have been published."

Case III.—Breschet (*Dict. de Méd.*, t. ix. p. 113, quoted by Richond-Desbrus, and by Lebert) reports having seen on a very old man, one of his patients, horny layers, which sprung from the glans.

Case IV.—Otto (*Seltene Beobachtungen, etc.*, Breslau, 1816, p. 109, quoted by Lebert) says that Dr. Ebers, hospital physician, some years since saw a man with a horn firmly attached to the glans. This horn was curved, and was greater and thicker than that described by Caldani.

Case V.—Carrow (*Bulletin de la Société Anatomique*, t. xxix. p. 235. Quoted by Lebert) describes a horn growing from the prepuce of a forester, forty-five years of age. It was situated between the hinder border of the glans and the meatus, on the left side of the frenum, and occupied the top of the glans. The blunt upper surface was dry, wrinkled, and easily split. The horn, fifteen to eighteen lines in length, was irregularly prismatic and triangular; the point was directed under and backward, in relaxation of the organ. There was no pain, but coition had for some time been impossible in consequence of the resulting pain to himself and his wife. The horn had existed for two years, and was gradually increasing. The horn was thoroughly excised, and a few days thereafter the patient left the hospital. His further history is not given.

Case VI.—Middledorpf communicated to his colleague Lebert the following case. A man seventy years of age, and for his time of life strong and well nourished, suffered ten years since from a commencing phimosis, for which no cause could be assigned. This increased to such an extent as greatly to impede micturition, and a year afterward the phimosis was operated upon. The wound healed badly, suppurated, and threw off crusts. Soon a hard, horny growth developed on the site of the excised prepuce, and increased so much in the region of the frenum that the patient cut it off piecemeal with the scissors; the upper part fell off sideways, but was reproduced. Upon the dorsum a horny growth took place at the seat of the former operation. Near the frenum, or rather on the whole under surface, a horny growth developed, formed of many single horny lamellæ cylindrically aggregated. When these plates split after the use of the scissors, the patient bound them together with a thread. He refused to be operated upon.

Case VII.—Demarquay (*Maladies Chirurgicales de Penis*, 1877, p. 330), speaking of horny growths on the gland, says: "Sometimes the horny production is single, and this is the most frequent case; sometimes there exist on the gland a certain number of horny lamellæ, as in a case which presented himself, in 1869, in my service, and which is represented in Fig. 11 (figure given showing a series of small horns from one-third to one-half of an inch in length around the base of the gland). These excrescences appeared on the gland four months since, under the form of two little 'boutons,' which persisted despite the employment of powder and appropriate pommade. Soon the 'boutons' were transformed into appendages, which increased in number and volume, and assumed the appearance they offer to-day. According to the patient, a typhoid fever which he had, and which lasted two months, in no respect modified the condition of these excrescences."

Case VIII.—Hebra (*Handbuch der Pathologie und Therapie*, II. Bd. S. 27. Quoted by Pick) refers to a case occurring in the clinic of Professor Schäbus, in Klangenfurt. In this instance a horn four inches long, of the thickness of a little finger, curved and slightly bent to one side, sprang from the dorsum of the penis, probably of the glans, although this is not stated.

Case IX.—Bergh (*Archiv für Dermatologie und Syphilis*, 1873, p. 186) refers to a case of horn growing from the "collum glandis," described by C. C. Siebold, in the *Ephem. Nat. Cur.*, vi., 1778.

Cases X and XI.—Hessberg (*Inaugural Thesis*, Göttingen, 1868, quoted by Bergh (op. cit.) and Pick, *Vierteljahresschrift für Dermatologie und Syphilis*, 1875, 2, p. 320) refers to two other cases.

Case XII.—Dr. P. A. Jewett, of New Haven, Conn., (*N. Y. Medical Times*, 1853, p. 79) reports the case of O. P. H., aged twenty-two, admitted to hospital at New Haven, August 2, 1846, for congenital phimosis, for which he was operated on, and discharged cured. On November 13, 1846, he was readmitted with extensive warty excrescences growing from the cicatrix caused by the operation for phimosis. These were treated for several weeks by caustic applications and active constitutional remedies, syphilis being suspected, but without benefit. The warts were then cut off; the wound healed well in a few days, and he was discharged cured. In the summer of 1848 the warts reappeared, and were removed at one of the New York hospitals. He was discharged well, and in three months again presented himself at the New Haven Hospital, stating that a few weeks after leaving the New York hospital he noticed on the glans a small, hard tumor, unattended with pain, but subject to paroxysms of intense itching, which continued to increase. At the time of admission to hospital, December 5, 1848, this growth presented all the appearances of a horn. It was light brown, lamellated, painless, and when burnt, as he was in the habit of doing to amuse the inmates, emitted the peculiar odor of horn. It measured three and a quarter inches in length, three-quarters of an inch in diameter at base, gradually tapering to a point. The only inconvenience was from its size and situation. It was removed by a simple incision, including the base of the horn and a portion of the glans penis. Four years after the operation there had been no return, and the organ remained perfectly healthy.

Vilieneuve has reported seventy-six cases of horns, of which three were on the penis and glans.

Case XIII.—Pick, J. T., Prof. in Prague (*Vierteljahresschrift für dermatologie und Syphilis*, 2, 1875, p. 315), reports the following:

April 13, 1874, J. W., day laborer, aged twenty-two, was admitted into general hospital at Prague, for a high grade of balano-posthitis, with congenital phimosis. The preputial orifice admits only a small sound, so that on urination the prepuce is distended, and between the prepuce and glans hard lumps and firm adhesions can be felt. A whitish, purulent fluid exudes from the preputial opening. Inguinal glands swollen and tender; no pain in urethra. No coitus has been had.

Psoriasis on scalp and on extensor side of elbow, and knee-joint. Phimosis operated on, many preputial adhesions divided, and a number of condylomata removed from the corona, and sulcus coronalis. As healing took place, the swelling of the inguinal glands disappeared; the papilloma returned, and disappeared after removal and energetic cauterization. On June 26th patient was perfectly healed, and discharged.

Nine months afterward the patient returned, with horny growth (figured in two colored prints). He stated that two months after discharge from hospital, and after slight itching of that part of the gland where formerly the papillomata were, fresh warts developed, which hard at beginning, in six months increased to their present size. Had had no coitus since leaving the hospital, and no medical treatment. The horn, attached at the junction of the gland and prepuce, was embedded as a nail in its matrix; numerous other small club-like horns sprang from the base of the gland, pointing forward, and extending laterally in their continuity half way around toward the urethra. The large horn, which curved from the right side toward the left, overhung the gland, and when the latter was laid against the belly, presented an appearance not unlike that of the crest of a dragoon's helmet. The dimensions of the horn were, over its greatest convexity 9.5 centimetres; its diameter at base 3.5 centimetres; and diameter at the point 2.5 centimetres. Its color varied from yellow-ish-brown to black, and its hardness was that of a nail. The horn was removed, with its lateral attachments.

On examination in its long axis, the horn seemed to be composed of fibrillated layers, more densely packed or pressed together upon the outer or external, than at the central portions. On microscopical examination, the horn was found to be composed of compressed epidermic cells. In longitudinal section these were seen to be imbricated like roofing tiles; on cross section, they presented a concentric arrangement.

In the lower third of the great horn, in the spaces between the horn cells, bloodvessels existed; and at the base the horn-plates were continuous with normal epidermis.

CASE XIV.—Mr. Pearce Gould (*Br. Med. Journ.*, Feb. 19, 1877, p. 305) exhibited a specimen of horny growth on the penis to the Clinical Society of London. The patient, aged fifty, had had congenital phimosis. "He first experienced difficulty in micturition about four years earlier, and was circumcised; the wound healed, except in the middle line, where a small granulating surface remained; in connection with this surface, two small warts developed, from the earliest formed a discharge commenced, and continued up to the time he came under Mr. Gould's care. On the middle of the upper surface of the gland was a sessile truncated horn, of yellowish color, translucent, and of the size of a small marble. The penis was amputated, the inguinal glands removed, and the patient rapidly recovered. Microscopic sections of the horn, prepared by Mr. L. Hudson, showed the usual epidermal structure, the cells being flattened, nucleated, and in regular superposed layers; no enlarged papillæ entered the base of the horn; the ulcer was epithelomatous; the glands showed no secondary deposits. Reference was made to Sir Erasmus Wilson's collection of 90 cases of horns, of which 5 were on the penis, and to the later collection made by Lebert of 109 cases, from various sources, of which 6 were on the penis.

"Mr. Gould also mentioned other cases, and stated that his specimen was the fourteenth recorded case of horn on the penis. Some of the horns had reached a great size; in one recorded by Mr. Jewett, the horn was 3½ inches long, and ¾ of an inch in diameter. In another case, recorded by Pick, the horn was 2½ inches long. In the case recorded by Mr. Gould, the patient was in the habit of paring the horn down. It had been shown that horns originated in three ways: from the interior of sebaceous cysts, which was the most frequent mode; from the matrix of nails, and from some change occurring in warts. Those on the glans penis belonged to the last group. Histologically they fell into two classes: the papillary and flat; the specimen shown was of the latter kind."

CASE XV.—In January, 1887, a man, C. C., aged fifty-three, presented himself at the clinic of the Jefferson Medical College of Philadelphia, during the service of Prof. S. W. Gross, with a horny nodular mass on the dorsum of his penis. Its removal was recommended, and assented to by the patient, who however did not return.

Sir Erasmus Wilson (*Medico-Chirurgical Transactions*, 1884, vol. xxvii. p. 64), refers to a paper by Mr. Lozes (*Mem. de l'Academie Royale de Médicine*, June, 1830), in which are reported three cases of horny growths on the glans penis.

Sir Erasmus adds, "In pursuing this inquiry, I have succeeded in collecting 90 cases, of which 5 were on the glans penis." These are most probably included in the foregoing list.

The following cases of horn upon the scrotum may also be referred to.

Lebert and Curling (*op. cit.*, p. 50) (Testis, 1856, p. 503) refer to a specimen of cancer scroti, with a horn-like growth, ¼ of an inch in length, which was removed from a chimney-sweeper, and is preserved in the Museum of the College of Surgeons (No. 2469). The process, when very long, is occasionally twisted like the horn of a ram. Some curious excrescences of this kind are represented in the clever etchings of Mr. Wadd (Cases of Diseased Prepuce and Scrotum. Pl. x. xi. xii.).

THE RARER FORM OF PULMONARY CONSUMPTION.

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To anyone who has had a large experience among consumptives it is quite evident that all such patients may be divided into two distinct classes. To the first, and by far the largest class, belong those in whom the disease is local; or, in other words, those in whom the disease is primarily confined to the pulmonary organs, and the constitution is secondarily affected. The second class comprises those cases in which the disease consists primarily in a constitutional disintegration, and the lungs become involved secondarily.

It is not only necessary that these two classes should be separated from a pathological point of view, but it will also be found that the prognosis as well as the appropriate treatment for each class varies greatly.

The first class comprises those cases in which the disease is in most instances acquired; and the second those in which, so far as my experience goes, there is a strong inherited tendency to the disease, and those who have been delicate during their whole lifetime. The first class may be called a class of walking patients, for, as a rule, they are able to be up and about until within a comparatively short time before their death; while the second class of patients, which in most instances belong to the female sex,

are generally bedfast during the whole or at least during the later period of their affliction.

The preliminary diseases from which the second class usually suffer are malaria, uterine and ovarian disease, neuralgia, anæmia, etc., all of which probably depending indirectly, if not directly, on an impoverished condition of the blood and of the tissues. Again, in the second class, and contrary to what one would be led to expect from the general emaciation of the body, there is usually such a small amount of lung lesion present that the practitioner is frequently thrown off his guard and led to mistake the true nature of the trouble. It is well enough to be cautious in the diagnosis of phthisis when only a slight amount of lung structure is involved, but when we are confronted by a patient who gives a family history which is decidedly tainted with consumption or scrofula, who has only a slight cough, but is thin, has occasional night-sweats, a variable or a complete loss of appetite, is suffering from occasional amenorrhœa, or irregularity of the menstrual flow; who probably made an imperfect recovery from her last childbirth, and in consequence of which she is afflicted with occasional pelvic pains, and especially if, under these circumstances, she is one of the youngest of her parents' family, it is doubly important to be careful in pronouncing an opinion as to the non-phthisical nature of the case, although the physical signs may show nothing more than the distribution of a few moist *râles* throughout the lungs.

In order to make the difference between these two classes of cases more clear I will give an example of the first before presenting one of the second class.

Case I.—J. B., aged forty, carpenter, has been coughing for nearly three years, expectoration is of a yellowish-green color and very profuse, especially in the morning, has had hæmoptysis, is losing flesh, has night-sweats, appetite variable, though usually good, tongue clean, never had malaria or rheumatism, and his evening temperature is 99°. Physical examination shows very little bodily wasting, impaired movement of left chest with slight flattening below clavicle of same side. Tympanic, dull sound on percussion over left apex in front, and dulness behind in same apex. Blowing respiration with creaking and crepitant *râles* in same region, some mucous *râles* distributed from here down to base. Right side normal. Diagnosis: Cavity surrounded by consolidation in left apex. This patient was placed under the external application of hot poultices, massage, inhalation of compressed and medicated air, together with hypophosphites, cod-liver oil, nutritious food, an open-air life, and in the course of two and one-half months there were audible no other abnormal physical signs in left apex than the cavity respiration, and a slight percussion dulness.

The following is the history of a patient belonging to the second class, or to the rarer form of pulmonary consumption:

Case II.—Mrs. X., aged twenty-six, married four years, came under my professional care in June, 1886, at which time she complained of having a cold. The preceding December she gave birth to a boy, which was followed by rather intense abdominal pain, chiefly located in the right ovarian region. A month later she became hot and chilly, and subject to occasional night-sweats; she was losing flesh, and had some cough, but very little expectoration—the latter being light in color. She had no hæmoptysis before this time or afterward. She was very anæmic. Her appetite was poor, and her bowels irregular. Her menses returned for the first time since her confinement, the previous May. She had never been subject to rheumatism, but complained of an ill-defined pain through the body which had a special affinity for the right side of the head behind the ear. Examination of the uterus by an expert gynecologist showed that the pelvic organs were comparatively normal. She lost a brother from pulmonary consumption, and her father had hæmoptysis in his younger days, although he is quite well at present.

Physical examination showed not only a marked degree of emaciation of the chest, but also of the whole body. Impaired respiratory motion over the whole chest. Slight subcrepitation and an occasional click toward the end of inspiration, as well as prolonged expiration in left apex. No dulness, and the right lung normal. Temperature also normal.

At this time she received quinine, iron, strychnine, and atropine, and carbolic acid with respirator. In regard to food she was ordered to take a glass of milk every hour or two, eggs and beefsteak as much as she can possibly eat. A month later she had improved in appetite and in strength, had less cough and expectoration, and night-sweats had diminished. Menstruation occurred at the regular time. *Physical signs:* no *râles*, or clicks, and the prolonged expiration in left apex was the only remaining abnormal sound. In addition to the above-named treatment, I gave her oxygen and compressed air inhalations. She continued to improved in every respect, so far as rational signs could tell, but in the following August her menses disappeared never to return. In two weeks after the cessation of her menses she began to experience severe ovarian pain in the right side, which radiated upward and occasionally gave her intense gastralgia, vomiting, and diarrhœa. At or shortly before this time her chest signs, with the exception of a weakened respiration, were normal. Her temperature was also normal. She had a tolerable good appetite, and the night-sweats were very infrequent. For the ovarian difficulty she was treated by a specialist, but no medication succeeded in permanently relieving the pain.

Saw her again the last week in the following November, when she appeared somewhat worse. The pain recurred at more frequent intervals, and was reflected from her spine over the anterior right side of her chest wall. At this time, the physical signs were principally on the right side of her chest; some dulness in right apex, and blowing inspiration and expiration in both apices. Some coarse mucous râles in right apex, extending to third rib in front, and to apex of scapula behind. A few clicks in left apex. Morning temperature 101° Fah. We now began to poultice her whole chest. There was a strong sympathetic connection between the pain in the chest, and that in the ovary; when it existed in

the former region, it was absent in the latter, and *vice versa*. She often said that the application of the poultice relieved the pain in the chest, but gave her occasionally a temporary pain in the right ovarian region. And strange to say, in proportion as the rational signs disappeared in the chest, the pain in the ovary became worse. I also applied the constant current at this time, which seemed to be the only thing which had the power of giving her any promise of permanent relief from the pain. Indeed, its action in relieving both ovarian pain, and that in the chest wall, was frequently instantaneous, and I feel quite certain that it spared her from a great deal of suffering. Her temperature now became very capricious, and irregular. It was normal, or quite so, for a number of days in succession, and then rose at once to 100° and 101°.

She went home in the middle of last January, when her chest was free from râles, but the dulness had not subsided, and I did not see her again until the middle of the following March, when I found her decidedly worse. She coughed very much, and expectorated profusely. She had a poor appetite, night sweats, and a temperature of 101° and 102° Fahr., morning and evening respectively. The physical signs at this time were as follows: Dulness in both apices. Bronchial respiration in right apex, mucous and subcrepitant râles distributed over the whole lung, as well as some mucous râles in left lung. Sensation and motion were normal throughout the whole body. I now, in addition to the other treatment, began the administration of sulphuretted hydrogen gas, according to Dr. Bergeon's method, twice a day. She thought that the gas relieved her cough and expectoration somewhat, but she was evidently beyond human aid, and died at the close of March.

This case is interesting from more than one point of view. Most deaths from chronic phthisis are caused by an extensive waste of lung tissue; but in this case there was no destruction of lung tissue; no cavity, and hence only a moderate amount of interference with the process of blood-aëration, insufficient of itself to produce death. Unquestionably, however, the disease in the lungs would have gone on to excavation, had she had vitality enough to live longer, under these circumstances; but at the time when the pulmonary organs became definitely involved, her constitution was already shattered to such a degree that there was nothing left to offer any decided resistance to the ingress of the disease, and she died from sheer constitutional exhaustion.

It also teaches an important lesson in regard to the line of treatment which ought to be followed, not only in such, but in all other cases of pulmonary consumption. As has already been intimated, it shows the powerful influence which the constitution sways over the destiny of the consumptive patient. Had the efforts to restore her general condition been successful, there can be no doubt that the case would have terminated favorably, for at no time up to within two months of her death, and probably later yet, was there sufficient pulmonary trouble, considered by itself, to give cause for serious apprehension. Hence, in these cases especially—although we must never lose sight of the great importance of local medication—the constitutional treatment is paramount to everything else. To attain this end, there can be no doubt that good nutritious food is the great desideratum, and all treatment must be subordinate to this aim in these cases. Food must be supplied regularly, and in such a way that the patient does not realize that he is in any manner forced to eat. All consumptives eat best when they are surprised by new foods. Variety gives them a relish which a monotony of dishes could not possibly excite. When the appetite flags give tonics such as nux vomica, tinct. of iron, hypophosphites, quinine, etc. Nothing that offers the least hope of doing good to these patients should be left undone. Change of air and of scenery, forced feeding, and when the anæmia is extreme, the subcutaneous injection of defibrinated human blood, as successfully practised by Prof. von Ziemssen and others, all suggest themselves as being of the greatest advantage in this special class of cases.

A STUDY OF THE PHENYL-HYDRAZIN TEST FOR SUGAR IN URINE, AS APPLIED BY ULTZMANN.

BY A. K. BOND, M.D.,
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Although the determination of the presence or absence of grape sugar in urine is, as a rule, easy, yet we find now and then cases in which it is extremely difficult to decide by means of the ordinary tests whether the results which we obtain are caused by grape sugar or not.

The fermentation test and the polariscope are unreliable where the percentage of sugar is very small. The reduction tests, the best of which is that of Fehling, are reliable in all cases as *negative* tests—when no reduction is effected no sugar is present; but, as *positive* tests, they fail when the amount of sugar is very small, for, in this case, the results may be due to other reducing substances in the urine. It is with pleasure, therefore, that we read of the introduction of a test of an entirely different order which promises to be a certain *positive* test for sugar in the urine. I refer to the phenyl-hydrazin chloride test, which was introduced by Emil Fischer,[1] and has been applied to the examination of pathological urine by P. Grocco,[2] and by R. von Jaksch.[3]

In the phenyl-hydrazin chloride test the sugar itself is obtained in a crystalline compound, the formula of which is $C_{18}H_{22}N_4O_4$. This compound, which Fischer names phenyl-gluko-azon, appears in the form of a yellow sediment which, under the microscope, is seen to consist of fine yellow needles. According to Fischer phenyl-glukosazon is not affected by watery solutions of alkalies. Suspended in warm water, it reduces alkaline copper solutions energetically. It dissolves in hot alcohol, and crystallizes out, when water is added, in the form of yellow needles. Heated to 204° C., it melts to a

[1] Berichte der Deutsch Chem. Gesellsch. zu Berlin, 17, 579.
[2] Annali di Chim. appl. alla Farmacia, 79, 258.
[3] Mittheilungen des Wiener Med. Doctoren-Collegiums, 10 Band; See also, his book, Klinische Diagnostik Innerer Krankheiten

dark red liquid, and at a higher temperature it is decomposed. Crystals, resembling those formed by glucose, are obtained from other members of the sugar group—levulose, galactose, sorbin, milk sugar, and maltose—but I find[1] that of these only levulose and milk sugar are ever found in the urine. Levulose is found only when dextrose is present, and milk sugar only during the course of the so-called milk fever. All observers agree that these sugars are the only substances which, under the conditions present, yield such crystals. The studies of Fischer, Grocco, and Jaksch have made this test an extremely valuable one in the hands of skilled investigators and chemists, but the addition of water to the urine interferes with the exactness of the results, and the use of the water-bath is quite unnecessary.

It is my purpose in this paper to describe a simple and rapid mode of using this test, which I learned from Professor Robert Ultzmann at his clinical lectures in Vienna, in the winter of 1885–86. I do not think that Dr. Ultzmann has yet published anything upon the subject, but the matter is of such importance that I do not hesitate to quote his words.

My notes upon his lectures are as follows: "It is a very simple test, and the most exact of all. Put into a test tube 1 cm. high of the phenyl-hydrazin chloride, and upon it 1 cm. (a little less than this) of crystals of sodium acetate. Then add urine to the half-test tube. Boil the mixture till it becomes clear. Let it stand for fifteen minutes, and examine the sediment for crystals. If albumen is present, you must first coagulate and filter. The urine must be clear. If there is no sugar, we find no such crystals. These crystals are in yellow sheaves, unlike any other product which appears in urine. Tyrosin gives crystals of a somewhat similar shape, but they are not yellow, and appear in urine only on rare occasions, as in acute yellow atrophy of the liver. This tyrosin, too, is a natural, not an artificial, product. Leucin, which has at times a somewhat similar shape, is unlike in color.

"This method is also useful for determining approximately the *quantity* of sugar in the urine."

Here, then, was a method which seemed in simplicity and accuracy to be exactly what is needed for the practising physician's use.

I procured some of the phenyl-hydrazin chloride in Vienna, and since my return from Europe I have made a very careful study of the test as applied by Ultzmann (for convenience, I shall speak of it as "Ultzmann's method"). The result is that I fully endorse his recommendation of it, although, in some respects, my experience has been different from his.

In my experiments I have used no appliances save those which are within the reach of every physician. Yet, in determining the sensitiveness of the test, I have exercised the greatest care in the preparation and measurement of my standard solutions of sugar.

I make the test as follows: I pour the phenyl salt—which is a dry substance resembling bran—into an empty test-tube until the tube is filled to the distance of about four-tenths of an inch from the bottom, and add crystals of sodium acetate, ground fine, to an equal height. Upon this I pour the urine—clear or cloudy—until the tube is half full. This gives in a test-tube five inches long, about the following proportions in weight: 1 part phenyl salt, 2 parts sodium acetate, 15 parts urine. I shake the tube until the crystals of sodium acetate are dissolved, then heat gently over a low flame until the mixture boils, and boil it for about half a minute—whether it becomes clear or not makes no difference. I then cover the tube and let it stand, and, after a proper interval, examine the sediment with the microscope. If sugar is present there will be seen first fine, bright yellow needles, which branch out or are joined by others as they are formed, until the field is dotted with groups like delicate sprays or sheaves, or radiating from a centre. A magnifying power of 200 diameters is sufficient for this study. That the phenyl salt is always in excess when the test is made in this way is shown by the constant presence of reddish globules in the field.

My experiments fall naturally into two series. The first series includes those made for the purpose of finding how long the mixture must stand before the crystals appear; of determining what percentage of sugar is necessary for the formation of the crystals; and of comparing this test, as simplified, with Fehling's test, which I believe to be the best heretofore in use. For this series I used, instead of pure grape sugar, which cannot easily be weighed, a crystalline compound of sodium chloride and grape sugar, which is easily weighed. A solution of this salt in distilled water (containing, by calculation, 1 part of anhydrous glucose to 1250 of water) gave, by Ultzmann's method, after standing eighteen minutes, a sediment in which, by the aid of the microscope, the crystals could be seen grouping themselves into delicate, spray-like forms. The same mixture yielded, twenty-one hours later, a yellow sediment, which was seen, with a one-inch objective as a hand-lens, to consist of feather-like groups of yellow, needle-shaped crystals. Under the microscope abundant sheaves of yellow crystals were seen. A mixture containing 1 part of sugar to 2000 parts of normal urine, which gave a fair reaction for sugar by Fehling's test, yielded, by Ultzmann's method, on standing twenty-two hours, four or five large yellow sheaves to a field of the microscope, and after it had stood forty-eight hours, about a dozen sheaves to a field. Mixtures containing 1 part sugar to 3000 or 4000 parts normal urine, which gave, with Fehling's fluid, very uncertain tests, yielded, by Ultzmann's method, after twenty-two hours, no crystals; but twenty-three hours later, several well-formed sheaves to a slide. It is possible that still more dilute solutions of sugar in urine might yield the crystals when treated in this way, but for ordinary office-use greater accuracy than this is not needed.

The second series includes those experiments made to determine whether, under any circumstances, the test, as applied by Ultzmann, fails to give the crystals in urine which contains more than one-fortieth per cent.—1 part to 4000 parts—of

[1] Neubauer und Vogel, Analyse des Harns, 1881.

grape sugar. In these experiments I used solutions of known strength of very pure grape sugar in distilled water. I treated by Ultzmann's method in all fourteen mixtures of these standard solutions with fresh, non-saccharine urine containing from one-thirty-sixth to one-half per cent. grape sugar, and obtained the yellow crystals in every case. In eleven of them the crystals appeared within twenty-four hours after the test was made; in three of them when the mixtures had stood more than twenty-four hours. Several of these fourteen mixtures were made with urine which threw down phosphates on boiling; one with urine which yielded, on standing before tested, a very abundant sediment of urates; one with urine containing a considerable quantity of albumen—the yellow crystals in this case in part appearing in the masses of coagulum, in part settling from the supernatant fluid in the form of sheaves; one with urine to which I had added quite an excess of sodium bicarbonate, to find whether alkalinity of the urine interferes with the test—in this case brisk effervescence occurred from the action of the bicarbonate upon the phenyl salt, but, as the latter was in excess, the solution continued acid and the crystals appeared, though in smaller numbers than usual.

These tests with artificial solutions of glucose in urine were confirmed by similar tests with the urine of patients suffering from diabetes mellitus.

Many tests were made with normal urine, but in none of them could I find even a single yellow crystal or sheaf.

Through the kindness of a medical friend, I had the opportunity of testing, by Ultzmann's method, a very interesting specimen of urine[1] which contains a substance which was mistaken for sugar by several life insurance examiners. This urine behaved with the phenyl-hydrazin test exactly like normal urine.

In the sediment from a solution of sugar in hydrant water, tested by Ultzmann's method, a yellow plant was found under the microscope, which in its very earliest stages resembled somewhat in color and form small sprays of sugar crystals. Upon further observation, however, the peculiar manner of growth of the plant removed all doubt upon the subject. This plant was not found in any of the urine mixtures.

I will now state briefly the results of my work:

The test of Fischer, as applied by Ultzmann, is easy to make, and does not take more time than Fehling's test, if, as is necessary, the latter be made with fresh solutions.

It is suitable for office use by physicians, and may be accurately made by those whose training in chemistry is imperfect.

It does not require great skill in the use of the microscope. In all my examinations the crystals, if present, were found upon the first slide examined.

When the sugar present amounts to one-fifteenth per cent., the crystals may be found fifteen minutes after the test is made.

The test is about as sensitive in the presence of sugar as that of Fehling, and is not liable to be disturbed by other substances contained in the urine. It is obtained in alkaline as well as in acid, in cloudy as well as in clear urine.

Normal urine does not respond to the test.

If the crystals are found, the proof of the presence of sugar is absolute.

My experiments lead me to believe that in *all* cases in which sugar is present in the urine to the amount of one-fortieth per cent. or more, the crystals may be found—although it may be necessary, when the quantity of sugar is very small, to let the mixture stand after boiling as many as forty-eight hours.

The single crystals show a strong tendency, in the most dilute as well as the most concentrated solutions of sugar, to form clusters; so that, in solutions which have stood some time, only the characteristic clusters may be found.

The crystals or clusters undergo no change of importance in aqueous solutions for a month or more, and so any sediment may be preserved and inspected from time to time. Even in urine mixtures they remain for weeks unchanged, decomposition of the mixtures being prevented by the phenyl salt.

Ultzmann's method may be used for rough *quantitative* determinations. In case the urine contains one-tenth per cent. or more of sugar, we may estimate the amount from the quantity of yellow crystalline sediment, even when the urine is not clear. When less than one-tenth per cent. is present, the amount may be roughly estimated from the number of crystals in a field of the microscope.

The salt of phenyl-hydrazin used for the test is quite stable, retaining its properties for months (apparently for years), even when exposed frequently to the air.[1]

[1] Described by Dr. Bruen, Boston Med. and Surg. Journal, December 30, 1886, and January 27, 1887; and by Dr. Marshall, THE MEDICAL NEWS, January 8, 1887.

[1] Phenyl-hydrazin chlor. hydrat. may be obtained from Eimer & Amend 205 Third Avenue, New York.

A CASE OF VENOUS ANASTOMOSIS ON THE DISK.

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OF CHARLESTON, SOUTH CAROLINA.

CASES of this kind are rarely seen, and the only one of which I have seen a report is that of Dr. B. Alexander Randall, in THE MEDICAL NEWS of September 11, 1886.

This anomaly occurred in the right eye of Miss A. B. The disk shows no signs of inflammation, but at the upper border of the disk a distinct connecting branch is seen between the superior nasal and temporal branches of the retinal vein. The patient has had trouble for years with her eyes, owing to errors of refraction and granular lids. Her general health has also been poor, and she is at present quite anæmic. With the following correction she sees $\frac{20}{xx}$. R. —0.75c. 30° ⊂ + 0.75c. 120°. L. — 0.50D.

A choroidal ring, more distinct on the nasal side, surrounds the disk.

MEDICAL PROGRESS.

The Physiology of Bergeon's Enemata.—At a recent meeting of the French Academy of Sciences, Bergeon read a communication in which he stated that carbon dioxide when introduced into the intestine was eliminated by the lungs in a manner similar to the diuresis of fluid through the kidneys. He stated that the tissues thus become impregnated with it. Pure gas was eliminated by the lungs; impure gas remained in the intestine, causing distention and colic.—*Gazette Hebdomadaire*, No. 26.

Total Extirpation of the Cancerous Uterus.—Dr. Fritsch has recently published in the *Archiv für Gynäkologie* a communication on sixty cases of removal of the uterus through the vagina for cancer, the condition for which alone the operation is indicated. 7 out of the 60 patients died after the operation, a mortality of 11.6 per cent. 2 died from hemorrhage, 1 after syringing the vagina, 3 from peritonitis, and 1 from ligature of the left ureter. In the last case the kidneys were contracted. Of the 53 survivors from the operation, 17 had died already from recurrence, in 6 still living recurrence was reported by competent observers, 3 patients had not been heard of since their discharge, and 3 were only operated upon in September and October, 1886. 24 remained in good health, 9 of these being reckoned as cured, two years having passed without recurrence.

Dr. Fritsch does not agree with Ruge that three distinct forms of uterine cancer exist—cancer of the body, cancer of the canal of the cervix, and cancer of the surface of the vaginal portion. The last two forms are not always to be distinguished from each other. In both, Dr. Fritsch observes, the disease always begins on the boundary line between the squamous and the cylindrical epithelium. It is more important to divide cervical cancer into the exuberant or hypertrophic fungating form of the exedent, or rapidly ulcerating type.

Dr. Fritsch objects to supra-vaginal amputation of the cervix; first, because in some cases of cervical cancer nodules have been found in the fundus; secondly, because the operation is liable to be followed by severe atresia; and, lastly, because hemorrhage cannot be so readily controlled as during total extirpation. The operation, Dr. Fritsch observes, should only be performed when a permanent one appears probable. The uterus must be freely movable. When its mobility is impaired, cancerous deposit in Douglas's pouch or in the broad ligaments will almost certainly be discovered. The fungous type is the least serious, provided that the vaginal mucous membrane is not involved. On the other hand, in cancer hardly visible at the os externum, the parametric tissue is often extensively infiltrated. Dr. Fritsch is opposed to preliminary scooping out of diseased tissues or other partial operations, which, in his opinion, disturb the lymphatics and promote the spread of the disease.

With regard to the stages of the operation, as performed by Dr. Fritsch, his principle is to keep the peritoneum open for as short a period as possible, and not to lay it open till the most difficult steps have been performed, and to get the uterus as freely movable as possible by detachment of broad ligaments from their lateral inferior connections, so that the operator may know in time if really total removal of the growth is possible. Should the parametric tissues be found to be involved, the surgeon must proceed no further. Dr. Fritsch neither sews up the flaps nor drains; he plugs the vagina with iodoform. The greatest difficulties are encountered when the uterus is large. Dr. Fritsch has in these cases combined abdominal section with the vaginal operation. He does not believe that the patient need lie in any particular position after operation; the scanty secretion from the wound can be removed by pledgets of iodoform gauze. After recovery, a smooth and straight scar in the vault of the vagina is more favorable than a hard funnel-shaped cicatrix. No doubt, timely performance of total amputation of the uterus through the vagina promises the best results, as uterine cancer does not appear to recur rapidly when completely removed. The operation, however, is difficult and tedious even for experts.—*British Medical Journal*, June 25, 1887.

Spartëine, a Heart Stimulant.—Langgaard reports the following formulæ, which he found useful in eighteen cases of heart diseases:

℞.—Spartëin. sulph. . . . . gr. 6.
Pulv. rad. liquirit.
Succ. liquiritæ . . . . . ää q. s.
Ft. pil. 20 in num.
Sig.—One or two pills from two to four times daily.

Also

℞.—Spartëin. sulph. : . gr. 3 to gr. 7.
Aq. destill. . . . ʒ 2½.
Solve.
Sig.—Twenty drops, from two to four times daily, in sweetened water or wine.

℞.—Spartëin. sulph. . . gr. 3 to gr. 7.
Syr. aurant. cort. . . ʒ 12½.
Solve.
Sig.—A small teaspoonful in water, from two to four times daily.—*Therapeutische Monatshefte*, June, 1887.

The Use of Cocaine in Hay Fever.—Sir Andrew Clark describes his method in the *Lancet* of June 11, 1887, as follows: "There are three ways of using cocaine in the local treatment of hay fever: it may be used in the form of a solution, of a spray, or of a nasal bougie. Personally, I prefer to use a solution varying in strength from five to fifteen per cent., and I apply it to the interior of the nose and the back of the soft palate by means of a large camel-hair pencil attached to an aluminium shank, and bent at an appropriate angle. For use in the form of nasal bougies, a quarter of a grain or more of the hydrochlorate of cocaine is dissolved in a mixture of gelatine and glycerine, and made of different weights and shapes, according to the peculiarities of the case on which they are to be employed. For using cocaine in the form of spray, some efficient and ingenious spray producers have been invented. Many of them are furnished with nozzle so constructed that the spray can be applied directly to almost any part of the nasal and pharyngeal cavities. These spray producers, with weak cocaine solutions, are sometimes very useful in allaying the small but still troublesome irritation

which, in the intervals of the hay-fever paroxysms, are apt to arise in the eyes and mouth."

THE EUCALYPTOL TREATMENT OF PULMONARY TUBERCULOSIS.—At a recent meeting of the Academy of Medicine of Paris BALL reported 21 cases treated by hypodermatic injections of eucalyptol; 6 died, 10 were much improved and left the hospital, 5 remained under treatment. The influence of the drug was the lessening of night-sweats, diarrhœa, expectoration, and fever; and tubercle bacilli disappeared.

DUJARDIN-BEAUMETZ reported that in his hands the remedy lessened expectoration, but did not influence the bacilli.

GUIFFERT, of Cherbourg, had treated 5 cases with marked general improvement. He mentioned 2 cases which Bergeon's treatment failed to benefit, which the treatment under discussion greatly relieved.—*L'Union Médicale*, June 11, 1887.

THE TREATMENT OF HEPATIC CONGESTION.—JULES CYR is quoted by the *Revue de Thérapeutique*, of June 15, 1887, as using the following treatment:

1. Application over the liver of compresses of cold water, often renewed; two or three leeches about the anus.

2. At evening, three-fourths of a grain of calomel should be taken, followed the next morning by five drachms of Glauber's salts.

3. As beverage, milk and Vichy water, or seventy-five grains of ammonium chloride in a quart of water.

4. A douche, while the patient is reclining, of water at a pleasant temperature, given over the hepatic region.

THE TREATMENT OF HÆMOPTYSIS.—From an extensive article by BARIÉ, in the *Revue Générale de Clinique et de Thérapeutique* of June 16, 1887, we take the following useful formulæ:

Tannin is a remedy most frequently used; its dose is from 9 to 15 grains; or by tablespoonful doses of the following:

R.—Tannin	gr. 8 to gr. 15.
Tinct. cinnamon.	♏. 30.
Syrup. simp.	ʒ ½.
Aquæ aurant. fl.	ʒ5.
Aquæ	ʒ25.

If gallic acid be preferred to tannin, it may be combined with ergotin as follows:

R.—Acid. gallic.	gr. 30.
Ergotin	gr. 15.
Glycerin.	gtt. 5.
Syrup.	q. s.

Make 20 pills.

5 pills should be taken daily. In cases where the use of krameria or ratanhia with ergot and digitalis is indicated, the following will be found useful:

R.—Ext. ratanhiæ	ʒ1.
Ergot.	gr. 45.
Digitalis pulv.	gr. 8.

To be made into 40 pills, of which 6 may be taken daily.

THE FREQUENT OCCURRENCE OF DISEASE GERMS IN THE HUMAN BODY.—In discussing the investigation of scarlatinal infection now in progress in England CROOKSHANK remarks as follows in the *Lancet* of June 25, 1887:

"We must bear in mind, in connection with this subject, that saprophytic organisms may occur in man, both in health and in disease, which produce very characteristic symptoms in the lower animals.

"If they gain access to the circulation through some surface lesion, they may, in an advanced state of disease especially, escape disintegration and be detected in the blood and in the organs after death. Thus they may readily be mistaken for the specific organism, if there be one, of the disease in question. We may also find more than one organism associated with a disease as the result of a double infection. Kassowitz and Hochsinger found in the organs of children which had died of congenital syphilis streptococci, which were regarded as the result of *Mischinfection*. It is interesting also to recollect how commonly streptococci have been met with. In addition to those I have already mentioned, we must bear in mind the streptococci in purulent inflammations found by Ogston, Rosenbach, Krause, Garrè, Hoffa, and Biondi, the streptococci found by Weichselbaum in acute pneumonia, the streptococcus isolated by Nicolaier from earth, the streptococci found by Emmerich in the air, and, I may add, the streptococci found by Babes in the liver and kidney in two cases of yellow fever; in the liver, kidney, and spleen in a case of *fièvre typhoide bilieuse*, and in inflammatory products consecutive to scarlatina, by Bokai and by Babes in joint affections after scarlatina, and by Charrin in septicæmia consecutive to anthrax in rabbits. In conclusion it is obvious that the experiments which have been analyzed must be repeated and extended before a definite opinion can be expressed: and as in addition to its pathological interest the inquiry involves a question of national importance, it is to be hoped that a commission will be appointed. By testing the result of inoculating blood from human scarlatina direct into the calf and the monkey, and by repeating and extending the experiments of Dr. Klein and Dr. Edington, there ought to be no difficulty in dispelling the present contradictions."

MILK DIET AND THE EXCRETION OF UREA.—CHIBRET reported to the French Academy of Sciences the results of a series of observations of persons upon milk diet, as follows: Examination by means of sodium hypobromite, of the urine of such persons, showed a great increase in the amount of urea excreted; the diet had been rigorously followed two months. The urine of a person in health was compared with that of two patients upon milk diet by means of diagrammatic curves; it was found that a solely milk diet increased the excretion of urea from sixty to one hundred per cent.; when milk formed only a part of the diet the percentage of urea was thirty-five. As one of the patients, who was obese, lost flesh, while the other, who was thin, gained flesh upon this diet, it is evident that the increased excretion of urea was not caused by denutrition.

The increase and loss of flesh corresponded to the variations in fat and glycogen in the two patients, and not to any variations in urea.—*Revue de Thérapeutique*, July 1, 1887.

Cocaine and Atropia for Iritis.—Guiaita gives the following as used by many ophthalmologists:

R.—Cocain. hydrochlor.	gr. 3.
Atrop. sulphat.	gr. ¾.
Acid. boric.	gr. 4.
Aquæ destillat.	ʒ2½.

—*L'Union Médicale*, June 25, 1887.

The Treatment of Morphia-craving by Sparteine and Nitro-glycerine.—Dr. Jennings, of Paris, writes to the *Lancet* of June 25, 1887, an article on this subject whose conclusions are as follows:

"To sum up, the morphia-craving is a complex suffering, at the same time cerebral and peripheral, each factor of which can be relieved by appropriate treatment. The organic distress may be soothed by sparteine, which recovers the heart in the same way as a hypodermatic injection of morphia. The cerebral craving (or yearning), often the more painful of the two, corresponds to a want of habitual congestion. This can be arrested with nitro-glycerine, which gives rise to the same kind of sensation in the morphia *habitue* deprived of his stimulant as the hypodermatic injection. It acts probably by inhibition *à distance* rather than by essential sedation of the nervous centres."

Preputial Calculi.—From the *Indian Medical Gazette* of April, 1887, we take the following account of an unusual case:

A ryot of Myoor, æt. forty-five, came to the Chingleput Dispensary to be relieved of difficulty in passing his urine.

He stated that his troubles began about four years ago, with phimosis, and, being unattended to, the preputial orifice gradually became smaller, with increasing difficulty in micturition.

The urine collected within the prepuce, distended it into a bag, and had to be squeezed out through the minute orifice, which did not admit the probe easily. On handling the prepuce, urinary calculi could be felt rubbing against each other. The penis was about one and a half inches longer than normal, curved somewhat downward; and the calculi were felt in front of the glands. The prepuce being slit up, three large calculi dropped out, of the size of average carpal bones. They were moulded to the shape of the preputial cavity, and were marked by facets.

He was discharged cured in five days.

The noteworthy circumstances in this case are the large size of the calculi, their unusual location, and the length of time that had been allowed to elapse before relief was sought. They were to all appearance phosphatic.

Mercurial Injections.—A discussion has recently been taking place in the Brussels Medical and Scientific Society as to the relative advantages of mercurial injections and inunctions combined with internal medication. Dr. Thiry prefers the latter method, as he thinks injections are attended with serious risks and inconveniences. M. Ed. de Smeth, on the other hand, practises injections largely—in fact, always—when mercury is indicated in syphilitic patients. At present there are in his wards 24 such cases in which no less than 900 injections have been given without any accident occurring; and M. de Smeth thinks that, as, apart from his own practice, M. Martineau has reported a series of 180,000 injections without any accident, Lewin 300,000 with 20 abscesses, and Paikert 5000 without any, it cannot be said that this form of treatment is more liable to inconveniences than other forms. He points out that there is a great difference between injecting insoluble salts, as calomel and the yellow oxide, in the way recommended by Scarienzo, upon which method M. Thiry's experience of injections was mainly gained, and injecting soluble salts, which is the plan he himself prefers and follows. Here, he says, the only objection to the injections is that the patient must be regularly seen by the doctor, which in private practice is sometimes inconvenient. Of course care must be taken that the syringe is perfectly clean and that the liquid is well filtered. In order to illustrate the occasional importance of the rapid action which can only be obtained by the method of injecting soluble salts of mercury, M. de Smeth mentions a case of syphilitic laryngitis of so urgent a character that it was thought that laryngotomy would be needed. However, by means of hypodermatic injections repeated five or six times during the course of twenty-four hours all danger was averted.—*Lancet*, June 25, 1887.

The Treatment of Eczema occurring at the Crises of Life.—Chéron advises the following treatment, in the *Revue de Thérapeutique* for June 1, 1887:

1. At each meal a teaspoonful of the following:

R.—Sodii arseniat.	gr. ¼.
Aquæ destill.	ʒ 4¾.

2. Constipation should be relieved by a saline purgative, generally citrate of magnesia, taken twice weekly.

3. An application should be made every evening of the following salve, used very gently:

White precipitate	gr. 15.
Vaseline	ʒ 5.
Essence of roses	gtt. 2.

4. Every eight or ten days the following hypodermatic injection should be given:

Nitrate of pilocarpine	gr. 1½.
Aquæ destill.	℥ 75.

An injection of from six to ten drops.

Contra-indicated in disease of the heart or great vessels.

The Effect of Essences upon Bacteria.—In the *Annales de l'Institut Pasteur*, No. 4, April 2, 1887, M. Chamberland examines the action of essences on the bacteria of charbon, and on many other less well-known microbes. The number experimented upon was 115; only fourteen allowed the development of the charbon bacillus in yeast-water saturated with their vapor. Among these was essences of cloves, which is sometimes used to arrest dental caries. But out of 102 essences that by their presence prevent the development of the organism, only eight seem to kill it definitively, for it usually revives as soon as the essences have evaporated. The essence of cinnamon alone appears completely to destroy the germs in four days, whilst bacteridian germs placed in fresh yeast-water

have been cultivated after having been for four days in contact with other essences. Essence of China cinnamon does not stop the development of filamentous bacteria, but essence of vespetro seems to kill it completely in eighteen hours. Placed in contact with carbuncle bacillus or its germs, in solution essence ½ cc., alcohol 10, saponine solution at 1-100th 20, water 70), seven essences kill that bacterium in doses varying from 1-13, 200th, to 1-24, 200th. These essences have about the same antiseptic power as sulphate of copper. Among these seven essences are three of great antiseptic power, either in solution or in vapor; essence of China cinnamon, of Ceylon cinnamon, and of origanum. The essence must be used fresh; when they become oxidized by exposure to air, they lose part of their properties. M. Chamberland next compares the antiseptic action of thymic acid and of different salts upon bacteria. The bichlorides of mercury, and of ammoniac and sulphate of silver, act at a strength of 1-80,000th; after these come thymic acid, persulphate of iron, chloride of zinc, etc. In order to study the antiseptic power of certain substances upon organisms in general, he prepared solutions of these substances at 1-100th, of which he poured 1 cc. into a series of small flasks containing severally 5 cc., 10 cc., and 20 cc. of neutral yeast, which gave him solutions of 1-600th, 1-1100th, and 1-2200th; to each of these he added ½ c. c. of washings of garden soil. He found that the most energetic antiseptics were sublimate of mercury and thymic acid. Sulphate and acetate of copper and bichromate of potash, although very active, allowed vegetations to grow; next to them in power were China cinnamon, persulphate of iron, carbolic acid, alum, and sulphate of quinine. Boric acid, hyposulphite of soda, salicylate of soda, arseniate of potash, bisulphide of soda, chloride of alumina, and chloride of lime are comparatively weak antiseptics.—*British Medical Journal*, June 18, 1887.

THE USE OF TALLOW TO SETTLE URINE EXAMINED FOR ALBUMEN.—MÉHU describes, in the *Annales des Maladies des Organes Génito-Urinaires*, for June, 1887, the following simple expedient:

In testing urine for albumen by hypobromite of sodium, the reaction is often obscured by a volume of nitrogen gas, which causes a film or mist, concealing the reaction obtained. Alcohol was formerly tried, but was inconvenient from the bulk required. A small mass, or pellet, of tallow, if placed in the test-tube before the agent producing the reaction is added, and the fluid shaken once or twice, will prevent the formation of the cloud of gas described. The gases contained in recently evacuated serous fluid may be dissipated by allowing a few drops of tallow from a burning candle to fall into it.

CITRATE OF CAFFEINE IN CARDIAC DISORDERS.—JACCOUD has used the following with benefit as a cardiac stimulant:

R.—Caffeine	. . . . .	gr. 100.
Sodii benzoat.	. . . .	ʒ 2.
Aquæ	. . . . .	ad. ʒ 8.

He prescribes from three to six grains in twenty-four hours; and in severe cases goes to twenty-five grains.

When the remedy is not well borne by the stomach, it may be given hypodermatically, and the following formulæ have been found useful by TANRET:

	Sodii benzoat.	gr. 40.
	Caffeine	gr. 35.
	Aquæ destill. . . .	ad. ʒ 2¾.
Also,		
	Sodii salicylat.	gr. 45.
	Caffeine	ʒ 1.
	Aquæ destillat. . .	ad. ʒ 2¾.

Dosage to be varied with the indications and amount of caffeine required.—*L'Année Médicale*, 1887.

THREE HUNDRED CASES OF OÖPHORECTOMY FOR UTERINE FIBROMATA.—DR. G. ZVORYKIN has collected statistics of nearly 300 cases of spaying (*kastratsia*) for uterine fibroids. A large proportion of these are from English and American sources; seven, however, are contributed by Russian surgeons, six by Dr. Zvorykin's chief, Professor Lebedeff, and one by Dr. Salmanoff. Two of them are described as interstitial, three as multiple interstitial, one as interstitial cavernous, and one as subserous multiple interstitial. In all these seven cases, both ovaries, and in three of them more or less of the tubes, were removed. The hemorrhage from which all the patients had suffered ceased, and no bad symptoms occurred. Dr. Zvorykin compares spaying with myotomy, and believes the one to be as devoid of danger as the other. Spaying, he considers, is indicated in cavernous fibromata; in retro-cervical or interligamentous tumors, where myotomy would be attended with danger; in all interstitial fibromata, especially in small ones where menorrhagia is the chief symptom; in subserous fibromata of large size, if they give rise to menorrhagia; and in cases where the patient has become so anæmic and weak that the loss of blood necessarily attendant on the operation of myotomy would be likely to affect her condition seriously. Spaying he considers contraindicated in subserous fibroids with long pedicles which can easily be removed; in large interstitial fibroids causing symptoms of weight and bearing down, but unattended with menorrhagia; in fibro-cystic tumors; in young subjects in whom fertility may be restored after myotomy; and, lastly, in cases where the ovaries are enclosed in a mass of false membranes, and their removal is consequently attended with great difficulty.—*Lancet*, June 25, 1887.

HOT-AIR BATHS IN SYPHILIS.—DR. STEPANOFF, of Moscow, has contrived a plan of treating patients suffering from syphilis which has resisted mercurial and iodine treatment. He has had a box or bath constructed with an iron bottom lined with thick felt, in which the patient is placed. The bath is heated to about 170° to 190° F. by means of two Bunsen's lamps, each consisting of five burners. After the patient has been "baked" he is put to bed and covered with blankets, so as to prolong the sweating process commenced in the bath for an extra half-hour. After this he is allowed to dress and go into the ward to his dinner. By means of these baths the mercury is rapidly eliminated from the system and the patient's condition greatly improves, and after a course mercury is found to act quickly and energetically.—*Lancet*, June 25, 1887.

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PERNICIOUS ANÆMIA.

At the last Kongress für innere Medicin, LICHTHEIM gave his experience concerning the dependence of pernicious anæmia upon the presence of the bothriocephalus latus in the intestinal canal. In the course of the last year he had observed two cases, of which the first presented itself before the publication of Reyher's interesting communication upon the same subject in the *Deutsches Archiv für klin. Medicin*, Bd. xxxix. In the first case, on account of the extreme weakness of the patient, no attempt was made to expel the parasite, or rather parasites, for post-mortem six bothriocephali were found in the intestinal canal. In the second case the parasite was expelled without perceptible effect upon the course of the disease. Lichtheim has seen nine other cases of pernicious anæmia in which no parasite of any kind was found in the digestive tract. He concludes, therefore, that the *rôle* of the bothriocephalus in the production of pernicious anæmia is a modest one, but admits that, clinically and anatomically, it is impossible to distinguish the cases in which the bothriocephalus is present from those in which it is absent.

The same observer also directs attention to the presence of degeneration of the posterior columns of the spinal cord in certain cases of pernicious anæmia. He has observed two such cases in which the diagnosis of tabes was confirmed by the necropsy, and a third in which, although the clinical evidence was not altogether complete, and there was no post-mortem examination, there was reason to suspect the presence of tabes. The affection of the cord is regarded as secondary to the anæmic condition, because the symptoms of the former either follow or are synchronous with those of the latter, and, in addition, the anatomical changes are those of an acute process. This is true also of the symptoms, which manifest themselves in the upper extremity much earlier than in ordinary tabes.

Lichtheim closes his communication with a consideration of the curative value of transfusion of salt solution in pernicious anæmia. He had become convinced that this measure was deleterious, both to the patient and the blood, and had abandoned it, but was induced to resume it by the favorable report of a case by Lépine, with the result of strengthening his former convictions. Of five cases in which he had lately employed it, two died a few days after the operation; two recovered from the operation, their blood condition remaining the same as before; the fifth was not unfavorably affected by the transfusion, soon after which the condition of the blood decidedly improved. The conclusion was that in anæmia of high grade and acute course, transfusion of normal saline solution is contraindicated; while in more chronic cases of lower grade, it may, perhaps, be of benefit.

In the discussion upon Lichtheim's report, JÜRGENSEN referred to a case of profound anæmia in which, the possibility of infection with anchylostomum duodenale not being entirely excluded, he exhibited the extract of male fern. A careful examination of the stools demonstrated the absence of anchylostomum, but showed enormous quantities of bacterium termo—the ordinary bacteria of putrefaction. Immediately after their expulsion improvement set in and proceeded to complete recovery.

LITTEN states that in fourteen cases he had examined the blood and feces without finding any of the parasites described by other observers of this disease. He believes that there are cases of pernicious anæmia for which, as yet, no sufficient cause has been discovered, while there are others, resembling the former in their finest details, which are fully explained by the presence of cancer, by changes in the gastric and intestinal mucosa, etc. This is certainly the most reasonable view of this obscure question, although there appear to be no good grounds for separating the pure cases of pernicious anæmia—*i. e.*, those of which the cause is unknown, from those of which the cause is known. The question is one of blood changes, and they are the same in both. A blood containing megalocytes, poikilocytes, and microcytes is the blood of pernicious anæmia. This condition may be secondary—*i. e.*, the cause is known; or primary—*i. e.*, the cause is, as yet, unknown.

A NEW INDICATION FOR AN ARTIFICIAL VESICO-VAGINAL FISTULA.

An artificial opening from the vagina into the bladder was advised and practised many years ago,

by the late Sir James Y. Simpson, by Emmet, and others, for cystitis. The chief principle upon which this operation was founded was that of giving the diseased organ complete rest; the bladder thus freely opened was no longer tormented by the presence of urine, and hence the spasmodic and painful contractions excited by this secretion ceased, for it escaped through the artificial opening immediately after its entrance. This operation was done in cases of catarrhal cystitis, in which other means faithfully tried had failed to effect a cure.

Pinard and Varnier, in the *Annales de Gynécologie et d'Obstétrique*, sustain the recent proposition of Hartmann, that the bladder should be opened through the vagina in cases of gangrenous cystitis. Such cystitis is most frequently the consequence of retroversion, or retroflexion, of the gravid uterus. It has also been observed to follow in some cases prolonged impaction of the child's head in the pelvic cavity. We might add to these causes an instance under our own observation, in which the accident resulted from a well-nigh mortal vesical hemorrhage which followed dilatation of the urethra with the crushing and removal of a very large calculus.

The indications for the operation, in case the cystitis occurs in consequence of a posterior displacement of the gravid uterus, are thus stated by Pinard and Varnier: When notwithstanding the disappearance of all cause of compression—either by restoration of the displaced organ, or the production of abortion—when, in spite of antiseptic washes, the urine remains opaque, fetid, ammoniacal, and mixed with broken-down membranes; if there is fever with an evening exacerbation, dryness of the tongue, and rapid emaciation; if hæmaturia occurs, and the catheter does not evacuate either urine or injected fluid, the operator should act at once. The only two plans presented are dilatation of the urethra, and opening the bladder through the vagina. But the former does not so readily permit the escape or the removal of the sloughing tissues, while, on the other hand, the latter gives freer access for exploration, and for the extraction of the foreign body, and the use of alterative injections; it also secures drainage and complete rest for the bladder.

The treatment thus advised for gangrenous cystitis we believe to be wise; and we wish that it had been suggested before we met with the only case we have seen of the disease, for though our patient recovered, it was only after a long illness, during a great part of which the result seemed doubtful.

CHOPART'S AMPUTATION.

In our issue of July 16th, Prof. J. B. Murdoch, of Pittsburg, published an interesting address upon Chopart's amputation, and relates certain personal experiences of an exceedingly favorable character. He enters a strong plea for the performance of this operation in suitable cases, in preference to the methods of Syme or Pirogoff. Whilst some surgeons are opposed to Chopart's operation in all cases, and teach that it ought never to be performed, a larger number of equally good authorities recommend the procedure in appropriate cases. Bryant is especially earnest in his advocacy of the operation, whilst Gross expresses the opinion that there can be no doubt "of the utility of this procedure in the class of cases under consideration." It is unnecessary to multiply the evidence for and against this operation. We coincide with Dr. Murdoch that the operation is a proper and useful one, and our personal experience bears us out in this statement.

The great disadvantage of the operation is in the tendency to retraction of the heel, a misfortune which many of us have witnessed, and it is the object of this short note to call attention to what we consider to be the mechanism of this retraction. Dr. Murdoch, in common with many others, lays the blame upon the unantagonized tendo-Achillis; and it is possible and probable that this is a factor in the production of the retraction, but if we consider the anatomy of the foot, with all its arches, we see that it is impossible for the face of the stump not to point downward when the weight of the body is thrown upon it.

The bones of the tarsus form an antero-posterior arch, with three points of support, the os calcis posteriorly, and first and fifth metatarsals anteriorly. The calcis does not occupy a horizontal position, but is directed upward and forward. The astragalus forms the keystone of the arch. The arches of the foot are maintained by ligaments and tendons. If now the anterior portion of the foot is removed, the calcis must yield when the weight of the body is brought to bear upon it, whether the tendo-Achillis is retracted or not. It is impossible for it to keep its normal position under these circumstances, and the head of the astragalus, and the anterior portion of the calcis are brought into contact with the ground. It has seemed to us that pressure upon the cicatrix would be best avoided by making a rather long and thick plantar flap, and a directly transverse dorsal incision above the line of the medio-tarsal articulation, so that when the astragalus and calcis are forced downward, the cicatrix might be above the line of pressure.

There is an advantage in securing the anterior tendons in the cicatrix, but whilst this gives a certain amount of flexion, it cannot prevent the sagging of the stump. If there is any indication that the tendo-Achillis is acting with undue force, it should undoubtedly be divided, or even resected, but we are convinced that the fault does not lie in

this condition nearly as much as in the one stated. It should always be our aim, however, to amputate in front of this joint when possible, as a better stump is secured if only a portion of the scaphoid and cuboid bones is retained.

LAPAROELYTROTOMY.

Dr. Alexander S. Clarke, of Brooklyn, in a recently issued Nancy thesis, dedicated to Gaillard Thomas, earnestly advocates the operation with which the name of the latter is so identified that it might with justice be called by it, if personal nomenclature were not so objectionable.

In discussing the reasons for the operation not having met with general acceptance, he denies that the one given by Skene is correct, to wit, because the operation resembles very much more in its method a surgical than an obstetrical procedure, but claims that the true one is the painful effect which the memory of the first laparoelytrotomies by Ritgen and Baudelocque have left. This reason, however, does not seem to us valid, for surely the failures of these operators could have but little influence in contrast with the remarkable successes recorded by Thomas, and especially by Skene, nor would it weigh with great European operators, like Leopold and Sänger, for example, if they really thought it the best method of artificial delivery in pelvic contractions.

Dr. Clarke publishes a recent letter from Dr. Thomas, in which he states that he regards "this operation as much superior in all respects to the Cæsarean or the Porro operation." So far as the last operation is concerned the statement may be at once admitted, for "the Porro" has recently so greatly declined in professional favor that its final abandonment seems near and probable. But with the successes which the Sänger method of performing the Cæsarean operation has recorded, the other part of Dr. Thomas's statement will not be generally admitted as correct. Clarke, in comparing the two methods—that is, "the Thomas" and "the Sänger" —claims that the former has been done in only five cases under favorable circumstances, and then all the women were saved, a result superior to that obtained by the latter. But, of course, neither he nor other friends of laparoelytrotomy can regard so small a number of cases, and thus selected, as establishing the relative value of this method.

One of his arguments in favor of laparoelytrotomy is that it avoids the "inevitable dangers of placental hemorrhage and peritonitis," belonging to the Cæsarean operation even when performed by the Sänger method. The means for avoiding hemorrhage in the latter operation are well known, and probably most operators will prefer a carefully made and accurate incision, the wound completely closed so that prompt union results, to a lacerated wound of equal size, even if no important organs or tissues are injured, and such accidents have happened to the best operators—a wound which cannot be at once closed, and which requires several days for its healing.

We observe that the author fails, as most others who have written upon the subject have also done, to give the case of Gianflome, in Italy, the operation having been done in 1857, the child saved, but the mother lost.

The Library of the Surgeon-General's Office is now being moved into the fire-proof building erected for its special use, on the southeast corner of the Smithsonian grounds, a full description of which appeared in The Medical News of September 18, 1886. During the removal the books, of course, are not available for reference, but it is anticipated that they will be rearranged by the beginning of September, and will then be again accessible for use.

The College of Physicians and Surgeons of New York announces that at the session of 1888–9, and thereafter, it will require preliminary examination of matriculants who do not hold diplomas or certificates from recognized colleges or schools of science. The examinations will be in writing, and will include English, Latin, arithmetic, algebra, and plane geometry.

Dr. Victor C. Vaughan reports that he has found tyrotoxicon in the ice cream which poisoned 150 people at Amboy, Ohio, on July 4th. A few drops of the poison extracted from the ice cream killed a kitten in ten minutes. He has also found tyrotoxicon in ice cream which poisoned 50 persons at Geneva, N. Y.

It is stated that the advertising or sale of patent medicines (secret or proprietary preparations) has been absolutely prohibited in Berlin, and sixty-one of them have been publicly denounced on account of disclosures made by chemical analysis.

REVIEWS.

The Healing of Arteries after Ligature in Man and Animals. By J. Collins Warren, M.D., Assistant Professor of Surgery, Harvard University, Surgeon to the Mass. General Hospital, etc. 8vo. pp. 184, pl. xiv. New York: William Wood & Co., 1886.

Inherited reputation is worth little, especially in this country, unless its happy possessor adorns it by addi-

tional achievements. Dr. Warren admirably fulfils this condition. His name is intimately associated with the famous medical department of Harvard College, and he has repeatedly shown that with his father's and grandfather's name he has inherited their ability for doing good work. The present book, in its matter, its beautiful mechanical work in printing, paper, and binding, and its fine plates, is the best work he has thus far done, and one that will add largely to his already enviable reputation. It is creditable to American surgery that such a work of laborious original research should be undertaken, and it will, we believe, long be the standard work in the English language on this all-important subject.

His first chapter, supplemented by a most extensive bibliography, covering no less than 235 titles, is an historical review of the subject and is an excellent foundation. Next he gives experiments on animals, then observations derived from man. Then follows an interesting and valuable investigation of the closure of the fœtal vessels, a happy study of a normal obliteration of the calibre of these vessels. The book closes with a short but clear and admirably written summary of his investigations.

He has done the subject an important service in drawing attention to the analogy between the processes of repair in ligated vessels and in broken bones, and he is to be felicitated on his naming the granulation tissue about the ends of the vessels at the seat of ligature the internal and external provisional callus, and in tracing the analogy between the osseous and the vascular changes that occur.

We have not space for a critical notice of the investigations he has made, but it is due to him to call attention to some few salient points. Thus, he has shown that the process of repair is not complete under from three to six months, and that the muscular cells of the middle coat are a prominent factor in the cicatrix. The analogy to bony repair is shown in the three stages which he enumerates as proved: (1) the immediate changes about the ligature; (2) the formation of the provisional callus; (3) the changes in the internal callus and the gradual absorption that follows.

A marked contrast is noted in the thrombi in septic and aseptic wounds, and it is such as to leave no doubt as to the influence of septic products upon the process of coagulation. He shows, also, that all the mechanical devices of different kinds of ligatures and of different modes of ligation are far less important than that immediate repair without suppuration be obtained, as is now possible with antiseptic surgery.

He denies the hitherto taught primary importance of proliferation of the cellular elements, and exalts the granulation tissue which forms the callus into the most important element. "The sole function of the ligature after it has closed the vessel is to keep the walls from expanding until they are held sufficiently firmly by the callus," and while the thrombus which, he states, is always to be found, is becoming adherent to the walls; the two forming an efficient barrier to secondary hemorrhage.

This book should be not only read but studied, and its teachings incorporated into the lectures on surgery of all our medical schools—a compliment we can but rarely extend to any author.

SOCIETY PROCEEDINGS.

AMERICAN OTOLOGICAL SOCIETY.

Twentieth Annual Meeting, held July 10, 1887, at New London, Conn.

(Specially reported for THE MEDICAL NEWS.)

(Concluded from page 132)

AFTERNOON SESSION.

DR. CHARLES H. BURNETT, of Philadelphia, presented the report of

AN EXAMINATION OF FIFTEEN DEAF MUTES BY MEANS OF MALONEY'S OTOPHONE.

The cases examined were pupils in the Pennsylvania Institution for the Deaf and Dumb, Philadelphia, and were between the ages of twelve and twenty-one years of age. The cases were divided into three classes: 1, congenital cases; 2, those losing their hearing between the ages of one and five years; 3, cases of profound hardness of hearing but who can still hear a little and can talk, so-called semi-mutes.

The method of procedure was as follows: five vowels were written and pointed out at the time of their repetition three times in succession through the otophone by Mr. Maloney. The pupil was then told to indicate which vowel was spoken when Mr. Maloney made another repetition, care being taken to mix about in the tests. The words Philadelphia, Mississippi, Burlington, Missouri, boy, baby, papa, and mamma were also used as tests as well as the consonants.

Hearing was excited in every instance; but fourteen of the fifteen cases gave ample evidence of hearing by their successful indication with the pointer as the different tests were repeated in their ears. It was noted that the results were not so good with the acquired cases as in the so-called congenital cases of deafness. This may be due to the fact that the process productive of the acquired form is more violent, involving the internal ear more often than in congenital cases, which generally give evidence of being simply catarrhal in their origin and affect the middle ear but not the internal auditory organ. In the case of semi-mutes the results were especially satisfactory, as they heard nearly everything said to them and returned intelligent answers to the questions. In such cases both the remaining hearing and the articulation could in all probability be improved by the systematic employment of such an instrument as the otophone as a means of instruction, the best results being obtainable where the instruction is begun in early life.

A paper with the same title was forwarded by Dr. F. B. Loring, of Washington, and was read by title.

DR. WM. W. SEELY, of Cincinnati, asked whether the use of this instrument was recommended simply as a help to hearing or as a therapeutic measure?

DR. C. H. BURNETT replied that the instrument seems to be an immediate help, and is also a valuable therapeutic measure. In the case of an extremely deaf person who was unable to hear a loud voice when the words were spoken close to the ear, and who with an ordinary ear trumpet could hear slightly, with this instrument he could hear fairly well from the

first. After exercising for fifteen minutes, he was able to hear with closed eyes the unaided voice, the words being spoken a foot from the ear.

Dr. Sexton, of New York, presented a paper on

EXCISION OF THE OSSICLES OF THE DRUM OF THE EAR FOR CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR TRACT.

Since bringing this subject to the attention of the Society, one year ago, he has continued the practice with satisfactory results, and presented some further observations based upon the records of nineteen operations. Of these nineteen cases thirteen were females and six were males, seven cases were between 5 and 12 years of age, eight were between 13 and 20 years of age, and four were between 23 and 40 years of age. The left ear was affected in eleven cases, the right in eight. In two cases both ears were the seat of suppurative inflammation, and in one there had been a mastoid abscess. In the majority of cases there had been a history of recurrent aural catarrh for a long time attended with pain in the ear. There were much deafness and distressing acoustic phenomena as autophonia and the like. The discharge was usually offensive. The general health of most of the patients was fair.

In all cases the drum-head was greatly impaired, the membrana vibrans being usually almost entirely gone; in most of the cases the membrana flaccida alone remained, perhaps with some portion of the membrana vibrans attached. Where any of the latter remained, it was liable to be found connected by bands with the inner wall of the tympanum. Sometimes a sinus of greater or less size opened through these diseased structures into the attic. The membrana flaccida, together with the membranous and ligamentous attachment of the ossicles, generally held the latter in place after the most extensive suppuration had long existed. Under these circumstances drainage was extremely likely to be interfered with. The manubrium and cicatricial structures depending from the auditory plate were frequently found adherent to the inner wall of the tympanum, while the attic and antrum were lined with much thickened mucous membrane.

Some portion of the middle ear tract was found to present more or less carious bony surface. In some instances the ossicles themselves were carious or ankylosed. In several of the cases the malleus handle was adherent to the inner wall of the drum. In some only a necrosed stump remained. In some the malleus and incus were adherent to each other. The incus was less liable to caries. The stapes cannot be so well examined as the other bones, since it is never removed. In some of the cases the operation was not resorted to until months or years after the ordinary methods of treatment had been resorted to without success.

Without going into all the details of the operation, the author said that experience had shown that it may be performed much more rapidly than was at first supposed. The first operations required an hour, the later ones not more than fifteen minutes. To the protracted operation he attributes some disagreeable symptoms, such as nausea, which had not been presented by the later cases.

The remaining fragments of the drum-head are everywhere detached from the tympanic ring with a slender trowel-shaped knife. The malleus is then freed from its attachments, including the tensor tympani muscle, by one or more sweeps of the knife. After all blood is removed, the long process of the incus is separated from the stapes if it be connected with that bone. The malleus handle is separated from the inner wall of the canal if it has been attached. The malleus handle is seized with stout forceps as high as possible and gradually detached and brought away. The removal of the incus is more difficult, since its long process is liable to be swept from view; with a little patience, however, the bone may be soon found, and its removal is then a simple matter. When lying in the attic the scraper may be of service in bringing it down. In most instances he no longer divides the chorda tympani. In some cases where the ossicles were very adherent, considerable force was necessary to detach them, and in one instance this was impossible.

After the operation the drum should be carefully dried with cotton and ten drops of a four per cent. solution of cocaine may be instilled. This is usually unnecessary. Usually very little or no reaction follows the operation. In females it is important to defer operation until a little time after the menstrual period.

In the nineteen cases both malleus and incus were removed in ten. In one the body of the incus alone was removed. In six cases the malleus only was excised.

When possible it is well to clear the drum of granulation tissue by treatment before the operation, since less hemorrhage will then be encountered. The duration of treatment after the operation was in 5 cases, one month; in 2, two months; in 2, three months; in 1, six months; and of the other 9 cases, 3 were unimproved, 1 failed to continue treatment, and 5 are yet under observation. Nine cases progressed steadily to a complete cure; 6 were much improved; 3 were unimproved, and 1 failed to continue treatment. Many of these were dispensary patients under bad physical conditions. A marked improvement in hearing occurred in nearly all cases. In the cases noted as cured, it was increased from 75 per cent. to 100 per cent., so far as testing with the voice was concerned.

This marked improvement in hearing was unexpected, and gave rise to the conjecture that we may recommend the operation for deafness alone in many cases where the drum is obstructed by the results of chronic purulent inflammation, although all discharge may have ceased.

It might be expected that the taste would be affected by injury to the chorda tympani nerve. In a few this was the case for a short time; recovery, however, always took place. Reproduction of the drum-head never took place. Among the results of the operation, may be mentioned the prevention of recurrent accumulations of purulent matter in the attic and antrum. The general health was nearly always improved. In two phthisical cases the cough was lessened in one and ceased in the other, whilst both gained much in weight. In children the effect on health was most marked.

The operation is performed with the patient upon the back and under ether narcosis. The electric light is almost essential. Magnifying lenses introduced into the speculum are of service. The after-treatment consists in keeping down granulation tissue and in aiding

in the transformation of the mucous lining into a dermoid condition. A meddlesome plan of treatment is undesirable. Where a large secreting tract exists a cure is sometimes almost impracticable. Alcohol has not been found useful in treating granulation tissue. Salicylic acid and boric acid have done good in a few cases. The peroxide of hydrogen has its use in certain cases. The persistence of discharge after operation may be expected in catarrhal and run-down subjects, especially where caries of the bone exists.

The specimens removed in these nineteen cases were presented.

Dr. Burnett stated that he had seen seven cases that had been operated on by Dr. Sexton. One case was of fifteen months' standing. There was no evidence of reproduction of the membrane. In the longer cases there was no discharge. In the cases more recently operated on there was still some discharge. In five of the seven cases, according to the statements of the patients, the hearing had been greatly improved.

Evening Session.

Dr. Theobald reported a case of

SYPHILITIC DISEASE OF THE LABYRINTH

exhibiting remarkable variations in the degree of deafness.

The patient was a man of about thirty-four years of age, the subject of inherited syphilis. In one ear the deafness was nearly complete, and in this ear there was little variation. In the other ear, frequent and sudden relapses occurred, after the hearing on several occasions had been brought up almost to the normal standard. Within twenty-four hours the hearing would fall from the ability to distinguish words in a whisper at twenty inches to a degree of deafness which would require the same words to be spoken in a loud voice. Iodide of potassium was given with but little effect, but decided benefit resulted from the administration of bichloride of mercury in combination with muriate of ammonia.

Executive Session.

The following were elected

NEW MEMBERS,

Drs. J. C. Lundy, of Detroit; Wm. H. Hotchkiss, of New Haven; S. D. Risley, of Philadelphia; and David De Beck, of Cincinnati.

OFFICERS FOR ENSUING YEAR.

President.—Dr. J. S. Prout, of Brooklyn.

Vice-President.—Dr. George C. Harlan, of Philadelphia.

Secretary and Treasurer.—Dr. J. J. B. Vermyne, of New Bedford, Mass.

Representative on Executive Committee of Congress of American Physicians and Surgeons.—Dr. C. R. Agnew, of New York.

Alternate.—Dr. Wm. H. Carmalt, of New Haven.

The next meeting of the Society will be held at the Pequot House, New London, Conn., Tuesday, July 10, 1888.

Adjourned.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-third Annual Meeting, held at New London, Conn., July 20 and 21, 1887.

(Specially reported for The Medical News.)

(Continued from page 156)

THURSDAY, JULY 21ST.—SECOND DAY.

GLIOMA AND PSEUDO-GLIOMA.

Dr. H. D. Noyes, of New York, wished to record the case of a girl who, when fifteen months old, had an eye enucleated for glioma of the retina, and who was living in good health, at the age of sixteen years. There had been no recurrence, and an artificial eye was worn constantly with comfort. The enucleated eye had been examined microscopically by Dr. Delafield and pronounced gliomatous. Another case had been seen eight years after enucleation of an eye for glioma, still in perfect health.

A boy aged five years fell, wounding his face and the lower edge of the orbit. Ten days later his mother noticed he could not see with that eye. After six months, light-perception had been lost; scleral vessels injected, iris slightly greenish, tension diminished, vitreous chamber partly occupied by a grayish highly vascular growth. Dr. H. Knapp joined in a diagnosis of pseudo-glioma. The eye was enucleated. Sections of it were exhibited showing an inflammatory mass and detached retina. The trouble seemed to have been caused by injury to the floor of the orbit, adjoining which the orbital fascia was hypertrophied and cicatricial. Before the enucleation no evidence of orbital injury was detected.

Dr. S. Theobald had seen a boy who had an eye enucleated for glioma, living nine years later with no sign of recurrence. In this case there had been no microscopical examination, but the macroscopic appearances satisfied him that it was glioma.

Dr. H. Knapp thought it doubtful if permanent cure is possible in these cases; he had recently heard of the death of a patient ten or twelve years after such an enucleation. Another case, seen last summer, remained well, six years after the enucleation.

Dr. W. H. Carmalt, of New Haven, agreed with the last speaker as to the tendency of the sarcomata to recur ultimately, and become general even after complete removal. He remembered the case of a babe six months old, blind in both eyes, where the diagnosis of glioma was made by several experts; and the eyes enucleated. But the microscopical examination revealed only a congenital detachment of both retinas.

Dr. J. S. Prout, of Brooklyn, had seen a case of pseudo-glioma go on to rupture of the eyeball posteriorly and kill the child. Here was additional reason for the removal of such eyes.

Dr. B. A. Randall had seen a case in which Dr. McClure had enucleated for glioma seventeen years before. He did not know of any microscopical diagnosis of the case. The patient was still well, and there had been no asymmetry in the development of the orbit.

Dr. E. Gruening had seen a girl aged five years operated on in 1875 for true glioma; and a girl aged one year operated on in 1879 for the same trouble.

There had been no involvement of the optic nerve in either case. Both were still healthy.

Dr. B. E. Fryer, of Kansas City, had, in two cases of intraocular tumor with hazy vitreous, had great assistance in making the diagnosis, from the electric light.

Dr. Noyes said he was sometimes able to make a positive diagnosis of glioma, in other cases he could not give an opinion without a microscopic examination. He used highly condensed light from a four-inch condensing mirror, and examined doubtful surfaces under a strong magnifier.

Dr. Knapp had used condensed sunlight.

Dr. W. S. Dennett, of New York, had used all kinds of light. The main thing was to get enough of it. He thought the electric light the most constantly available and most manageable.

Dr. H. D. Noyes reported a case of

removal of a prolapsed lachrymal gland.

A girl aged twenty came with the history of a swelling under the upper lid that had been growing for nine years. It was brought to view by raising the lid, and extended within six mm. of the cornea. It was quite movable, very elastic, and free from pain. A much smaller mass presented in a similar position on raising the lid of the other eye. The larger mass was removed, and proved to be the normal lachrymal gland, which seemed to have taken this abnormal position simply by reason of an undue laxity of its fibrous capsule. No unpleasant effects followed the removal.

a suggestion for the relief of entropion of the lower lid.

Dr. H. D. Noyes had operated four years ago for entropion of the lower lid by dissecting up a narrow strip of skin from below the base of the lid, and after removing a little conjunctiva from the lid toward the outer canthus, had attached the end of the strip at this point. Last winter the patient returned with the lid in good position, but with the little bridge, or bridle, of skin still fast to it. This little band was removed, leaving a perfect cure of the entropion.

Dr. John Green, of St. Louis, had formerly practised the operation of making an incision through the skin near the base of the lid, and parallel to the lid border. The skin of the lid was then dissected up, and drawn down and attached lower on the cheek. This gave a good immediate result, but it was not permanent. Latterly he treated entropion of the lower as he did that of the upper lid, adding to his former operation an incision parallel to the lid margin, upon its inner surface. This had rendered the operation more effective, and its good results more permanent.

Dr. W. W. Seely, of Cincinnati, asked if this was not simply the Hotz operation practised on the lower lid.

Dr. Green said that it differs from the operation, known in this country by the name of Dr. Hotz, in not splitting the lid. The second incision is fairly on the inner surface some distance back from the orifices of the Meibonian glands; and it sacrifices no skin. It was the operation commonly practised by the ancients on the upper lid; but they, on the lower lid, merely removed a large piece of skin.

Dr. E. Gruening had used the Hotz method, putting the sutures through the whole thickness of the conjunctival sac except the skin. He removed nothing, and had found entropion of the lower lid as easy to remedy as entropion of the upper lid.

Dr. Noyes believed that there were cases where this expedient of a "buckle" of skin to hold the lid in position would be found useful.

a phenomenal pulsation in the interior of the eye.

Dr. W. F. Mittendorf, of New York, had observed this in the eye of a patient with hyperopic astigmatism and asthenopia. The fundus and the tension of the eye were normal. There was no spontaneous pulsation of the vessels. On the disk the perivascular sheaths were particularly well marked. Above the disk there was, stretched between two vessels, a bag or band of gray which pulsated synchronously with the action of the heart, although not the slightest movement could be seen in the vessels. Higher, and to the nasal side, there was a gray shred attached to an artery that pulsated when sufficient pressure was made on the globe to cause ordinary arterial pulsation. The conclusion of Dr. E. G. Loring and himself was, that the former appearance was a connective-tissue band, and not a bag connecting two perivascular sheaths.

Dr. L. Howe wished to call attention to the pulsation tracings which could be obtained from the normal eye, by a form of plethysmograph adapted to it.

Dr. E. Jackson had seen a tag of connective tissue attached to a perivascular sheath, hanging out over a rather deep physiological cup on the disk, which pulsated when no pulsation was apparent in the vessels. Both eyes presented this phenomenon.

increase of blindness in the united states.

Dr. L. Howe, of Buffalo, called attention to the fact, that while the population during the ten years from 1870 to 1880, increased 30 per cent., blindness during the same time increased over 140 per cent. By means of a diagram, the percentage of increase in each State separately was shown. The statistics also show that blindness increased in an almost constant ratio from north to south, and that it decreased in the same way from east to west. This was also shown by colored maps. The cost of sustaining this army of over fifty thousand blind was estimated, on the lowest basis of cost and of wages which would have been earned, at over sixteen million dollars in 1880, or twenty-five million dollars in 1887. As for the causes, contagion was found to exercise the most important influence. This was found by a special examination made for the pupose of 128 pupils at the Batavia Asylum for the Blind; by the statistics collected by Magnus, and by the records of over forty-eight thousand cases treated at the Manhattan Eye and Ear Hospital. Immigration was also considered as an important factor in view of the large number of cases of contagious diseases of the eyes introduced every year into the country, and the laxity or absence of quarantine regulations regarding them.

Dr. H. D. Noyes noticed that the increase of blindness was especially marked in States with great mineral resources, where large numbers of the population would be liable to mine and mill accidents, etc., and where it would be difficult or impossible to obtain skilled atten-

dance for such injuries. Some means should be devised for the relief of such cases.

Dr. G. C. Harlan, of Philadelphia, called attention to the uniformity in the proportion of blindness due to conjunctival disease, as shown by different sets of statistics.

Dr. S. M. Burnett thought that in connection with locality the influence of race should be considered. Negroes form a large proportion of the population of the Southern States, and they are almost entirely exempt from trachoma, although especially liable to scrofulous affections of the cornea.

Dr. W. F. Mittendorf was not surprised at the increase of blindness; he thought it due largely to the crowding of young persons into public institutions.

Dr. P. A. Callan, of New York, asked: What can be done to check it? Should not societies be organized in every large city to instruct the public in the care of the eyes?

Dr. M. Standish, of Boston, in a dispensary service where a large proportion of the patients were Irish, and where there were many cases of trachoma, had noticed that most of the flagrant cases of this affection appeared among those who had lately arrived in this country, as though it had been contracted during the passage in the crowded steerage of the emigrant ships.

Dr. Howe offered the following, which was adopted:

Whereas, The Census reports indicate there has been an increase in the number of blind in the United States more than four times as great as that of the total population; and

Whereas, An inquiry as to the causes of this shows that it is largely due to contagious diseases of the eye, therefore

Resolved, That a committee of three be appointed to examine further as to this apparent increase, and recommend means for its prevention.

Resolved, That the President of the United States and the Secretary of State be respectfully requested to furnish this committee with whatever letters or other recommendations may be necessary to further their investigation in this country or elsewhere.

Resolved, That officials in charge of residential schools and similar institutions be also requested to assist the committee to any extent in their power.

Dr. L. Howe, of Buffalo, was appointed chairman of the committee, and the President was permitted to announce the other members at his leisure.

THE EYE OF THE ADULT IMBECILE.

Dr. C. A. Oliver, of Philadelphia, had examined twenty young adult male imbeciles. Nineteen observations were obtained, with the following conclusions:

First. The eye of the male adult imbecile is an organ which is capable of proper functional activity.

Second. By reason of early mental incapacity, the ordinary appearances seen in the used eyes of the mentally healthy are lessened in due proportion to the amount of work given to the organ.

Third. The eye of the imbecile being practically an unused organ for close and careful near work, the distention of the globe and elongation of its visual axis with consequent increase in refraction, is almost entirely avoided, this being in direct ratio to use.

Fourth. The want of these physical changes may be considered as significant of a type of the unused healthy human eye.

Fifth. The healthy eye of the imbecile serves to teach us that the various conditions seen in the used eye of the mentally healthy must be considered as pathological changes, the representatives not only of general want of tone, but of constant and frequent abuse of a delicate organ.

Dr. E. Jackson said that the author had spoken of being unable to test the accommodation of imbeciles. In the shadow-test with the plane mirror, we have a reliable and convenient method of measuring the accommodation.

CASES ILLUSTRATING CHANGES OF FORM IN THE EYEBALLS.

Dr. S. D. Risley, of Philadelphia, reported nine additional cases of eyes with hypermetropic refraction passing, while under observation, into myopic refraction, through the turnstile of astigmatism; the first and last states of refraction being determined with complete paralysis of the accommodation. The importance of the existing astigmatism was insisted upon as a cause of the eyeball distention; and, therefore, the careful correction of the astigmatism was regarded as of great importance in the treatment of these cases.

All of these cases yet presented to the Society—twenty-two in number—were characterized by asthenopia, aggravated by use of the eyes, retino-choroidal disturbance, diminished resistance to normal intraocular tension, and slow distention of the sclera. They were all partially or completely relieved for a time by the correcting glasses, and other treatment employed, and in some of them the trouble returned only when the glasses were neglected. He believed that in a much larger group of cases this process was going on, and would have continued to progress if it had not been checked permanently by the use of the correcting glasses. One of the cases, that of a lady about fifty, illustrated the fact that these changes were not confined to youth.

Dr. W. W. Seely thought that lack of the proper balance between opposing extraocular muscles, is a most frequent factor in such changes of refraction.

Dr. Risley had for many years made it a routine practice to test that balance; in only three of the cases reported was it incorrect. These exhibited insufficiency of the interni. Two were relieved by tenotomy of the externi, and the third by prisms. He felt confident that astigmatism was the important factor.

Dr. H. Knapp asked the opinion of the members as to the power of correcting astigmatism by voluntary unequal contraction of different parts of the ciliary muscle.

Dr. Seely had a patient who could correct 1.5 D of astigmatism after leaving off his glasses for a little time, but the power of doing so was not strictly under control of the will.

Dr. S. M. Burnett thought that, undoubtedly, there were such cases, and that a practical point was that the astigmatism might be different for near, from what it was for distant vision.

Dr. B. A. Randall had seen several cases of marked increase in the degree of astigmatism under the use of a mydriatic. In one case this amounted to 3 D.

Dr. W. F. Norris said that almost every case of hyperopic astigmatism can make the horizontal, then the vertical lines alternately clearer, especially if there be any retinal irritation.

Dr. W. H. Carmalt thought that cases in which astigmatism was corrected or aggravated by contraction of the ciliary muscle were so common, that the point should be regarded as settled.

Dr. Theobald was able to vary, within certain limits, the strength of the cylinder correcting his own compound myopic astigmatism, without impairing his acuteness of vision.

Dr. Risley thought that only in mydriatic paralysis did we get the true refraction of young persons. But he had never satisfied himself of the existence of power to change the astigmatism by voluntary unequal contraction of the ciliary muscle. Astigmatism might be partly corrected by changing the shape of the cornea through pressure, particularly by the lids.

Dr. Knapp thought astigmatism could be partly corrected by pressure from without, but not of the lids. In most cases, the principal meridians were such that pressure of the lids would aggravate the astigmatism.

THE PATHOGENESIS OF PTERYGIUM.

Dr. S. Theobald, of Baltimore, urged that any theory that attempts to explain the causation of pterygium, must account for the fact that it always occurs over the insertion of one of the recti muscles into the sclera, and usually over the insertion of the internal rectus. Existing theories do not do this. The one ascribing pterygium to injury and ulceration of the cornea, at the margin of the conjunctiva, ignores the fact that the process often starts in the conjunctiva, some distance back from the cornea; while those ascribing it to conjunctival irritation fail to account for its especial frequency on the nasal side of the cornea. If, however, we suppose that pterygium be due, at least in part, to an influence which use of the recti muscles exerts on the blood supply of the conjunctiva over their attachments, these points are readily explained. Persons presenting this affection, often give a history of recurrent hyperæmia of the part after using the eyes. Then the internal recti are in closer relation with the conjunctiva covering their insertions than any of the other muscles; and are most frequently and severely taxed. The cases reported by Dr. J. A. Lippincott at this meeting, bear out this view.

Dr. D. B. St. J. Roosa said that in a large proportion of cases of pterygium, a history is given of traumatism as the commencement of the process. He thought persistent hyperæmia over the attachment of the internal recti quite common, but that it would not lead to such extensive proliferation of tissue.

Dr. Theobald held that some cases are doubtless due to traumatism, but these were only occasional, and often not situated in the usual location. But ninety per cent. of pterygia are situated at the nasal side of the cornea, and this, traumatism, or corneal ulcers will not explain.

Dr. J. A. Lippincott thought that persistent hyperæmia commonly produces hyperplasia of the part. Dr. Roosa's objection to the theory seemed not well founded.

RECURRENT RETINAL HEMORRHAGES, WITH DEVELOPMENT OF BLOODVESSELS IN THE VITREOUS.

Dr. S. Theobald had previously seen the patient for refractive troubles. In April, 1886, there had been conjunctival injection, pain, and dimness of vision. The ophthalmoscope showed small hemorrhages above the disk. These increased in number for a few days, and the diagnosis of thrombosis of the upper retinal vein was made. In July, vision $\frac{20}{XL}$; in August $\frac{20}{XX}$. September 20th she had a fresh hemorrhage. In October there was a dark mass like a globule of blood below the disk. In January, 1887, there were fresh hemorrhages. February 22d, vision again $\frac{20}{XX}$. March 26th, a floating opacity was discovered in front of the disk, which was found to consist of small bloodvessels held together by semi-opaque connective tissue. By June 3d this had become smaller, and vision = most of $\frac{20}{XX}$.

Dr. W. H. Carmalt said that in February, 1877, a man consulted him for sudden blindness of the left eye, the vitreous being filled with blood. A month later there remained traces of coagula in the vitreous. In August the vision of the right eye was lost in the same way, and hemorrhage was found in the vitreous, with choroidal changes. In January, 1878, the left eye was again affected. When the hemorage cleared up, there were floating bodies in the vitreous, and a meshwork of bloodvessels extending far forward from the fundus. The nerve was pale, the veins rather large, and arteries small, and to the nasal side an artery ruptured, and an ecchymosis adjoining. The general condition of this eye and the new vessels in the vitreous continue the same. Every few months he has a fresh attack of hemorrhage, but lately these attacks have been confined to the other eye. The vessels seem to come from a point outside the nerve.

Dr. B. E. Fryer had seen one case of recurrent retinal hemorrhage which he thought was due to scurvy.

Dr. O. F. Wadsworth had seen, ten years ago, in a man then over thirty, extensive hemorrhage into the vitreous of one eye, which was clearing up, when hemorrhage occurred into the retina of the other eye. The fundus of this second eye seemed otherwise normal, except spots of perivasculitis near the equator, and on one vessel a fusiform white enlargement. Again, the first eye became almost blind from hemorrhage. After this, when the vitreous cleared, the retina could be made out, but with transparent membranes in front of it, carrying vessels in the vitreous, some of which could be traced to their connections with the retinal vessels. Two years ago there had been no recurrence of hemorrhage for over a year. The other eye early returned to the normal condition.

In another man, aged twenty-three, there had been sudden blindness from great hemorrhage into the vitreous. This afterward cleared up in a large measure, and he had a recurrence, after no special exertion, just as he was getting into bed. The sight was afterward lost.

Dr. H. Knapp had treated these cases as he did lesions of the choroid. But the main point was to avoid

fatigued the eyes, and to put them to rest early in the evening. A waitress, well treated by the family with whom she lived, almost always had such hemorrhages when the family had given an evening party, and when she would be kept up late and much fatigued.

EMBOLISM OF THE CENTRAL RETINAL ARTERY.

DR. G. C. HARLAN, of Philadelphia, reported the following case: The patient was a clerk, fifty-two years of age, in good general health. While reading with perfect comfort, a shadow suddenly appeared before his left eye; and, on closing the other and looking up, he could just distinguish large objects about the room, through a "brownish mist," and in a few minutes sight was entirely gone. An ophthalmoscopic examination, made the next morning, showed an extensive œdema of the retina, giving the whole fundus a grayish tinge; disk pale, and its margins blurred; arteries very pale, though not much narrowed, and some of the smaller branches lost in the retinal œdema; large veins contracted in places, particularly on and near the disk, but generally of full calibre; phenomenon of visible, slow, continuous circulation of the blood in bead-like sections, well marked in superior temporal artery and vein; macula occupied by bright red patch, oval in form, with long diameter horizontal, and several of the minute terminal vessels in the neighborhood unchanged, and apparently isolated; two small dots of retinal hemorrhage at outer margin of the disk.

The œdema increased decidedly for the first few days, and then gradually subsided. There was still a little remaining on the nineteenth day, after which the patient was not seen for three weeks, when the color of the fundus was normal. The visible circulation lasted only about a day and a half, disappearing first in the artery. The veins refilled at their narrowed portions, and retained nearly their normal calibre, while the arteries became paler and narrower, until only the two main trunks could be seen, and these showed white lines along the margins from perivasculitis. The spot at the macula gradually disappeared. The disk regained the distinctness of its outlines, and remained dead white. (Colored plates were shown, illustrating the first and the final appearance of the fundus.) The pathology of the case was very obscure; the heart and kidneys were normal, and there was no symptom of degeneration of the arteries. A caries of the middle turbinated bone on the same side, from long standing nasal catarrh, was not thought more likely to act as a cause than would be a similar local disease in any other part of the body. The only possible causes seemed to be that some product of the nasal disease might have found its way into the general circulation, and lodged in the retinal artery; that an embolus might have been formed of a fragment washed from a parietal thrombus in some distant vessel; or that the obstruction might have resulted from disease in the retinal artery itself.

SIMPLE GLAUCOMA.

DR. D. COGGIN, of Salem, Mass., reported a case in which the left eye, after gradually failing for four years, had become entirely blind, with the characteristic excavation of the disk. The other eye, then, with correcting glass, had full vision. Subsequently its tension increased, and vision fell to ¼. The pupil remained normal, eserine had no influence in arresting the disease. Iridectomy was done, and there had been no further advance in the process in the eighteen months that had since elapsed. Does not the performance of iridectomy offer these cases more hope than any other measures? Other cases were reported, which, without operation, went on to complete blindness.

THE DANGER OF USING OLD HAMMERS.

DR. G. C. HARLAN had his attention called to this by a patient, whose eye had been penetrated by a scale from a hammer he was using. After long use the metal in a hammer becomes crystallized and very brittle, and a layer forms at the surface that is extremely liable to be chipped off. A hammer showing such a layer was exhibited.

(To be concluded.)

AMERICAN NEUROLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Long Branch, N. J, July 21, 22, and 23, 1887.

(Specially reported for THE MEDICAL NEWS.)

(Continued from page 138.)

THURSDAY, JULY 21ST.—MORNING SESSION.

DR. J. H. LLOYD, of Philadelphia, presented a

NOTE ON A CASE OF INSANITY OF DOUBT.

These cases are characterized by a special form of delusion which differs radically from the delusions either of grandeur or persecution. They are changeable, negative, vulnerable, and confessed with timidity and mortification. They are somewhat allied to melancholic conditions, but are not characterized so much by depression of spirits as by confusion and perplexity of mind. The patient is apt to recognize the morbid character of the mental state, and will willingly take measures to counteract and cure it.

He related the case of a lady brought from a distant city to Philadelphia, to be placed in a hospital for the insane. During the preceding year she had shown change of character and habits, and had developed some well-marked symptoms of the *folie du doute*. She had been known to get in and out of bed at least twenty times on retiring at night, because of some morbid train of associated ideas which made her feel that she had not performed the act aright, and that unless it was done in a certain precise manner it would in some way be the cause of disaster to her, producing disease or her death before morning. So again, recently, she obliged her husband to remain in her room with her, after arising, until she had put on and taken off again, innumerable times, one of her skirts, apparently from a morbid impulse of the same kind. In order to be rid of those morbid promptings, she is impelled to resort to little tricks, repetitions, and foolish actions, which explain the erratic conduct of which she is guilty. Thus, when dressing, she obliges her husband to hold a pin for her, which she must seize at just the right moment, otherwise the toilet must be made again. She has sometimes insisted upon this long-suffering husband rising in the night, going down stairs, lighting a certain gasburner and extinguishing it again in just a certain way, because this was necessary to absolve her in some

manner from some of her morbid doubts and associations; and she has not been content until her husband has humored her.

She is a woman, about thirty years of age; rather under weight for her build; of not very good color and complexion; of sound muscular system, but not well developed, and suggesting rather physical than mental impairment, and that not serious. She said that she knew perfectly that her notions were morbid, and hoped to be able to conquer them with improvement of her health by horseback and outdoor exercise. But she opposed being placed in an asylum, and threatened, if she were, suicide. Her husband was advised to take her home, but, if with time the case grew worse, to place her in an asylum.

The several cases which he had seen, have all probably been of the neurotic or constitutional type.

Dr. Mills had seen this patient and concurred in Dr. Lloyd's opinion. Extreme care should be used in committing these cases to an asylum, for if they be brought into court but few juries would adjudge them insane, although he did not doubt their insanity.

Dr. Gray remarked that he had no doubt that these cases are insane, and should not hesitate to put them under restraint, but would not do so unless he well knew the antecedents. In his experience he had found them exceedingly dangerous, as a number of them will go a long time without manifesting dangerous symptoms, when some day they will commit some terrible deed. He cited a case in which a woman had been in an apathetic condition for some time, who had, by actual count, washed her hands four hundred times in one day, and yet for all medico-legal purposes would have been considered sane. She had become debilitated owing to neuralgia and some uterine difficulty, but her mind seemed to recover somewhat under careful medical treatment. He, however, decided to send her to Bloomingdale, and so informed her, stating the result he hoped to attain in her case; but the day before she was to go, she, unfortunately, quarrelled with her mother on some trivial matter and set fire to her own clothing, having secretly procured and hidden matches about her person. He deemed them especially dangerous when left with children.

Dr. Landon Carter Gray read a paper on

CHOREA,

which, he said, has been considered as a self-limited disease of an average of ten weeks' duration, but he considered it more serious than has been allowed. Of 134 cases noted in his records, 17 have had one relapse, 4 have had two, 3 have had three, 1 has had five. In 23 the disease was distinctly chronic. He then gave the statistics of the remainder, some suffering from hysteria, and some from convulsions, some also from a neurosis; two were fatal. The mortality in pregnant women he placed at twenty-five per cent. He considered it to be greatly increased by mental impression ending in chronicity or cure. One peculiar case was quoted in which red, painful spots appeared at the ankle as premonitory symptoms, the following day choreic symptoms were shown, and the painful spot had disappeared. After a careful retrospection of his case, the writer had come to the conclusion that rest in bed was the best remedial agent. Eight years ago he had concluded that arsenical treatment was the best method to be pursued, but he had since discovered his mistake, and that arsenic was but temporary in its effect. He also used large doses of dialyzed iron, thirty minims to two drachms well diluted; galvanization of the spinal cord also being of benefit.

Dr. Starr inquired as to the probability of adults becoming insane after developing chorea, as in some cases he had noticed a tendency to melancholia.

Dr. Lloyd remarked that he had noticed in a pregnant woman a tendency to mental impairment.

Dr. Dercum asked if he had had any experience with cimicifuga.

Dr. Hammond said that in his practice he used arsenic almost exclusively, and in anæmic cases combined it with rest and tonic treatment.

Dr. Edes mentioned cases which had passed into insanity, but had afterward recovered.

Dr. Gray considered choreic insanity of very rare occurrence; as to whether the choreic patient was more prone to insanity that he could not say. In regard to cimicifuga, he considered it as a tonic in this disease, but he had not had much experience with it.

Dr. M. A. Starr, of New York, made some remarks

ON PARAMYOCLONUS MULTIPLEX, WITH REPORT OF A CASE.

He drew attention to the method of staining advocated by Weigert, the specimens being soaked in the solution before they are cut, and he exhibited specimens thus prepared.

Afternoon Session.

Dr. Dercum, of Philadelphia, reported

TWO CASES OF HEMICHOREA ASSOCIATED WITH BRIGHT'S DISEASE.

He called attention to the fact that the movements first commenced in the arm, next the face, and finally involved the whole body. This condition remained for two weeks, the motion being so violent as to interfere with sleep. A carbuncle appeared on the neck, and death finally resulted. At the post-mortem the vessels were found to be thickened and somewhat pale. The second case was that of a carpenter, sixty years of age, who had suffered from vertigo for several years. Suddenly he lost the use of his right leg. This lasted for two weeks, but he was perfectly conscious. He afterward fell a few feet from a scaffold, but escaped without injury. Unfavorable symptoms followed; albumen was found in the urine, and he passed water twice during the night; casts also being found in the urine. He asked whether there was any association of hemichorea with Bright's disease. In neither of these cases was there any history of hemiplegia.

Dr. Edes thought that these symptoms were not alone confined to Bright's disease, but that the general system was involved; that there are cases of hemiplegia which come and go very rapidly. He thought in Dr. Dercum's cases there was some disturbance in the circulation, but not enough to be detected after death.

Dr. Mills was inclined to agree with Dr. Edes, and thought that the disease produces unilateral depression of the general system. He had seen not a few cases

in which hemiplegia was developed in Bright's disease. He considered this to spring from a condition purely local, developed in the cerebrum from the uræmic poison; and at the post-mortem, unless under the most careful examination of the brain, he would find nothing that he could call a gross lesion. In general terms, we had an interference of circulation. Why it should be on the right side in one, and on the left in another, he did not know, and he considered it purely accidental. He thought chorea might be produced in this way.

DR. DERCUM remarked that, although he had made careful microscopical examination, he had found nothing but general œdema, and in one case slight sclerosis of the vessels, but not more marked on one side than the other.

DR. E. C. SPITZKA, of New York, read a paper on

ACUTE OR GRAVE DELIRIUM.

He considered that this condition might arise from various causes, commencing with insomnia, inability to collect the thoughts, and a feeling of impending misfortune; some may feel hilarious, some have illusions of hearing or touch; others, again, are passive. Both the temperature and pulse increasing, the symptoms denote extreme exhaustion; later on, before death, but just previous to this, the patient may become sane. He held that this condition was due to disturbed circulation, produced by morbid changes in the brain and perverting its function.

DR. GRAY remarked that he had had only one fatal case of this kind. One case had now been living three years, and was in an asylum; another lived for six months. One case had a history of syphilis. The fatal cases that he had seen had been so violent that they had to be restrained.

DR. MILLS stated that in three cases of so-called hysterical insanity which had been under his observation, two died and one recovered. He believed that two of them were cases of grave delirium.

DR. HENRY HUN, of Albany, reported a case of

GLIOMATOUS HYPERTROPHY OF THE PONS,

which will appear in full in an early issue of THE MEDICAL NEWS.

DR. M. A. STARR read a paper on

PARAMYOCLONUS MULTIPLEX,

based on the case of a grocer who previously enjoyed good health, but had recently strained himself in lifting a box. The pain commenced below the right shoulder and was so severe that he immediately consulted a physician, and while in his office was seized with a convulsion and screamed with pain. This was followed by spasms of the muscles of the trunk, with ten or twelve attacks in twenty-four hours, groups of muscles of the extremities gradually becoming affected, and spasm of the diaphragm was also observed. These spasms he could not control and any exposure to shock would produce them; they were more liable to occur under mental excitement, and pressure on the right shoulder at the seat of pain would produce them. The spasms of the muscles were very violent, but did not move the joints. Tapping of the skin would produce a spasm. He considered this affection a functional neurosis. This, he believed, was the tenth reported case. The disease was a spasmodic affection of the muscular system occurring bilaterally, and coming on in a series of violent clonic spasms occurring at intervals after violent physical or mental strain. Galvanism, arsenic, chloral, etc., had been found beneficial in the treatment.

DR. SPITZKA mentioned a case, but the patient was not quite equally affected on both sides of the body; the movements were 145 to the minute.

DR. DANA mentioned a case he had seen in which the movements of the muscles commenced at 5 and increased to 60 in the minute, but it did not resemble Dr. Starr's description in all points.

DR. MILLS could not see the necessity of dividing this from muscular tremor and making it a separate group, and thought it might be of interest for Dr. Starr to state the differential diagnosis. He had seen cases so closely resembling these that he thought they could all be classed under the same head.

DR. LLOYD had seen a number of cases of hysterical tremor which closely resembled the symptoms mentioned by Dr. Starr, and he was inclined to believe that there was hysteria in his case also.

DR. STARR stated that the affection was bilateral. He could not agree with Dr. Dana that it was a case of convulsive tremor. It was a question in his own mind whether the case was hysterical or not. He could find no trace of hysteria whatever in the case, although there might be; but he did not see why this should prevent these cases from being classified into certain groups.

(To be continued.)

CORRESPONDENCE.

LETTER FROM MUNICH.

The Hospital—Obstetrical Statistics—Prof. Winckel's Clinic.

The obstetrical and gynecological division of the hospital here has presented much of interest. The department is in a separate building, of modern construction, and as to light and ventilation, and in general appearance, seems to a cursory examination, entirely satisfactory. The University and Hospital are, like everything in Germany, under government supervision and regulation. There are over eleven hundred students, the medical course of study occupying five years—practically four and a half—and entrance to it must be from the gymnasium, the completion of the course there being guarantee of preparatory education. With the large number of students I have never seen together more than about fifty. It is not pleasant over here to hear the comments medical men make upon a system of education which permits a student to attend a gynecological or obstetrical clinic (if there be such) before he has finished his anatomy.

A few statistics from the official report of the obstetrical hospital may be of interest. The first may be novel: From May, 1884, to May, 1885, of 950 patients admitted, only 146 were married. In the following year, of 830 patients, only 68 were married.

From 1874 to 1883 there were 10,518 deliveries with 114 deaths; a mortality of 1.08 per cent. From 1883 to 1886, there were 2080 cases with 15 deaths; mortality

0.81 per cent. Of the deaths, 8 were from infectious and 7 from non-infectious diseases. The operations numbered 132—or 6.3 per cent. For a single year the operations were 61 in 941 cases, and presented the following:

Reposition of cord		6
Forceps:		
eclampsia,	1	
dilatation of cervix,	1	25
danger to mother,	2	
danger to child,	21	
Version (deformed pelvis, 3)		18
Perforation and cranioclasis		5

In the same year are reported 52 ruptures of perineum: of the first degree, 4; of the second, 45; of the third, 3. Also one laceration near the clitoris, giving rise to arterial bleeding. There were four cases of eclampsia, all recovered.

Of the 940 children, 106 died; subpartu, 60; fœtu macerat., 34; asphyxia, 4; rupture of uterus, 2; other causes, 6. Operations: forceps, 4; version, 5; perforation, 5—total 14.

Puerperal statistics: Of 950 cases, 707 were dismissed on the seventh day; after the seventh day, 213; sent to gynecological wards, 16; died within twenty-four hours of reception, 2. There were 242 cases of puerperal disease, among them: œdema of vulva, 44; puerperal ulcer, 107; partial gangrene of vulva, 2; cystitis, 3; parametritis lateralis, 29; bilateralis, 7; peritonitis, 4; pyæmia metastatica, 1; erysipelas, 3; phlebitis, ven. saph., 2; mastitis parenchymosis, 13; suppurative, 1.

The spray is not used during delivery, but every attention to disinfection by vaginal douches, and to cleanliness on the part of attendants is observed.

The departments of obstetrics and gynecology are under the care and direction of Prof. Winckel, and the lectures and courses of instruction are by him. The recent translation of his book on *Diseases of Women*, an honor it deserves notwithstanding the excellent works of our own countrymen, renders any introduction of him unnecessary. I witnessed his instruction in operative gynecology, of which two lessons of two hours each are given weekly. The soft parts are attached to, firmly sewed into, the phantom. Upon three such phantoms three parties of students performed the operations at once. One of the operations was total exirpation of the uterus per vaginam, and that it could be thus practised is sufficient evidence of the value of this method. It will be found described in *Archiv für Gynäkologie*, B. xxiii. H. 2. The soft parts are kept in a solution of corrosive sublimate and glycerine, and I was assured that careful record had been kept, and the observations showed that there had been no increase of puerperal diseases among women attended in labor by those students who were pursuing this course.

The operating hour is very early here—seven o'clock. I had the pleasure of seeing several operations by Prof. Winckel. The spray was used, but not thrown directly on the parts; a single apparatus threw its stream over and above patient and operator, and I was informed that outside of the hospital this would be dispensed with. The first case witnessed was extirpation of ovaries, or Battey's operation, for hemorrhage from a myoma. The patient was forty; the tumor somewhat larger than a cocoanut. The operator first scrubbed the abdomen with soap and brush, and disinfectant solution; then covered the abdomen, except the seat of operation, with soft towels wrung out of the solution. A colpeurynter was introduced into the vagina and distended with water, in order to raise the tumor out of the pelvis. Considerable difficulty was experienced, even after extension of the incision, in getting the tumor out of the abdomen, on account of its being very smooth and round. The colpeurynter was removed, and the tumor lifted up by the fingers of one hand in the vagina, and then turned out of the abdomen, great care being taken, of course, not to wound it. The ovarian pedicles were then tied with silk, and divided, the tumor afterward replaced in the abdomen, and the wound closed.

I also witnessed two ovariotomies, neither of which presented anything very extraordinary. The pedicle was transfixed and tied, no particular method or special "knot" being used, but it was efficiently done. Then, instead of cauterizing the part of the pedicle above the ligature, the peritoneum was drawn over it and stitched together with fine catgut. In one case the pedicle was quite short, and necessarily suffered some tension during ligation. Under such circumstances, Prof. Winckel emphasized the necessity of a careful inspection of the pedicle below the ligature for possible slight ruptures or lacerations which may give rise to consecutive hemorrhage. Such a tear was found in this case, and closed with fine catgut sutures.

After the laparotomies, the toilet of the peritoneum was very gentle and restricted. The abdominal wound was closed with silkworm gut sutures, introduced from without inward, and from within outward, the peritoneum and all the tissues of the wall included, and each one tied as soon as passed. The wound was then covered with pieces of iodoform gauze, aseptic cotton laid over the abdomen, and a wide roller bandage of loose material turned on.

I had the pleasure of seeing these three patients five or six days after the operations, with temperatures but little above normal, and doing well every way. No dressing of the wound is made until the seventh or ninth day.

I witnessed also an Emmett's operation. The "ectropion" was scarcely more marked than a number of cases seen in Italy, where the real nature of the lesion was not recognized. Prof. Winckel uses the scalpel altogether for paring, and closed the parts with silkworm-gut sutures introduced with an ordinary well curved surgical needle, just such as was used in closing the abdominal wound after laparotomy. These details are mentioned because great weight is laid by some upon the especial method of, or peculiar instrument for, certain operations, and this seems to be the case particularly in gynecology. R.

Munich, June, 1887.

PILOCARPINE POISONING.

To the Editor of The Medical News,

Sir: About five years ago I saw a case of pilocarpine poisoning which I never thought of sufficient importance to report until I had read the account of Dr. Glinsky's case, quoted in The Medical News of July 16th. The treatment being very different but the result the same, my case may have some value in connection with that

one. I was then a second-year medical student and my room-mate, a druggist, wishing to "break up a cold," asked my advice as to the best diaphoretic. Following my instructions he took two drachms of the fluid extract of jaborandi and went to bed. In about half an hour, when I followed him up-stairs, I found him suffering with the symptoms exactly as detailed by Dr. Glinsky—profuse perspiration and salivation, dimness of sight, prostration, a sensation of cold, tremors, and extreme general nervousness. I was too much frightened to take his pulse or temperature or note the state of the pupils. Comforting him with the assurance that I had never heard of any one's dying from the effect of jaborandi, I hastily consulted all the authorities at command, but without getting any help from them. While I was trying to decide what to do, all the symptoms suddenly passed off, excepting only the perspiration, which persisted, though in a moderate degree, for several hours. The duration of alarming symptoms was certainly not over an hour and a half, probably not more than an hour from first to last. No effect of the jaborandi was perceptible on the following day.

Dr. Glinsky's patient recovered promptly and thoroughly under the use of tannin, emetics, and atropine. Mine did equally well on nothing at all, and I think the suddenness of the improvement was as striking in my case as it could possibly have been in his. His treatment was rational and scientific, and, doubtless, under the circumstances, the proper thing to do; but that it was unnecessary, or, at least, that it would have been so in my case, I am sure.

EDWIN H. RIDWELL, M.D.

VINELAND, N. J., July 21, 1887

DANGERS OF ANTIPYRIN.

To the Editor of THE MEDICAL NEWS.

SIR: Your editorial in THE MEDICAL NEWS of July 23d on the "Dangers of Antipyrin," comes very appropriately at this time to me, having just had an experience in the use of antipyrin which impresses me with the fact that it is a dangerous drug, especially when there are idiosyncrasies.

A few days since I prescribed antipyrin in seven grain doses in the form of capsules to a lady in good general health suffering from nervous headache, the ordinary remedies having failed to relieve her. She took the first dose, and reported to me that in a short time, within five minutes, it had such a distressing effect on her that she said she feared she would die. Roaring in the head, watery and suffused eyes, burning sensations about the neck and face, and what was the most alarming symptom, great uneasiness in the præcordial region, a feeling of constriction and inability to breathe were the conditions noted. The effects gradually wore off and the headache was relieved. A few days afterward a second capsule containing seven grains was taken for the same purpose and with the same results, only more intensified, as she reported.

Some days ago I saw the lady, and telling me that she was suffering from a headache, I gave her, much against her will, one-half of the seven grain capsule, making grains iiiss. It was but a few moments until all the unpleasant symptoms above described were seen: suffused eyes, roaring in ears, with burning sensation over neck and face, and the most marked evidence of cardiac depression and embarrassed respiration. The pulse being so feeble and frequent, and the other signs of collapse so marked, I felt the urgency of stimulating, which was accordingly done. Gradually these effects wore off, the last of the unpleasant symptoms to disappear being the constriction in the præcordial region. While recognizing antipyrin to be a valuable addition to the list of our new remedies, we cannot be too cautious in its use. I can but think that the dose ordinarily advised is too large.

Yours, etc.,

ALEX. H. WEIR.

WESTERN LUNATIC ASYLUM,
STAUNTON VA., July 23, 1887

NEWS ITEMS.

A SANITARY CONVENTION will be held at Traverse City, Michigan, under the auspices of the State Board of Health, on Wednesday and Thursday, August 24 and 25, 1887.

THE NEW BRUNSWICK MEDICAL SOCIETY held its seventh annual meeting on July 19th and 20th, at St. John, Dr. P. R. Inches, of St. John, presiding. The following officers were elected for the ensuing year:

President.—Dr. P. R. Inches, of St. John.

Vice Presidents.—Dr. B. S. Thorne, of Havelock, and Dr. J. H. Ryan, of Sussex.

Treasurer.—Dr. Thomas Walker, of St. John.

Secretary.—Dr. T. W. Musgrove, of St. John.

CHROME YELLOW IN "NOODLES."—A Philadelphia baker has been recently arrested by the Society for the Prevention of Food Adulteration on a charge of coloring "noodles" with lead chromate. "Noodles" as sold by this baker are cakes, not unlike the American doughnut, but are German in their origin.

THE SALE OF HOMŒOPATHIC REMEDIES BY DRUGGISTS.—The Austrian authorities refuse to allow druggists to sell homœopathic remedies, but limit the dispensing of such articles to homœopathic practitioners who follow the laws of homœopathy. The purpose of the regulation is to check the sale of proprietary preparations.

FRENCH AMBULANCE TRAINS.—The Railway Company of the West has recently equipped a model train for the transportation of sick and wounded soldiers, in time of war or of mobilization. It is so arranged that in time of peace it may serve the ordinary uses of transit; when a hospital train it will be under the care of the Red Cross Society.

The train in its different cars, when ready for use, will represent a well appointed hospital, with all the equipments for food, drugs, surgical supplies, and attendance which ingenuity can suggest. The apparatus for the easy support of the sick and wounded is also of the best.

THE SANITATION OF HEALTH RESORTS.—In a paper on the sanitary police of watering places and health resorts in France, presented to the French Society of Public Health, Dr. Bouloumie explains briefly why it is

that the present system of inspection and supervision of these plans, which in theory is quite elaborate and careful, amounts to nothing in practice.

The chief object of the local medical inspector or health officer at such a place is to get practice among the visitors, and to obtain this he needs the good will of the proprietor, the hotel-keeper, etc. He must be prepared at all times to certify to the excellence of the sanitary arrangements, to prove that the water is good, the sewerage superb, and that any alleged cases of typhoid are either not typhoid or have been contracted elsewhere.

It is, of course, quite different with the physicians of our own health resorts, but perhaps it will tend to keep them thoroughly conscientious and disinterested in their opinions if sufficient scepticism be maintained to demand additional evidence as to the healthfulness and sanitary condition of these places of public resort. We observe that even State boards of health are sometimes very reluctant to tell the truth to the public about the health resorts which are under their jurisdiction, so that it is no wonder that local health officers should lean—just a little.—*Sanitary Engineer*, July 9, 1887.

Professor Kölliker, of Würzburg, recently celebrated his seventieth birthday and fortieth anniversary of his academic work. He was the recipient of distinguished honors, and the occasion was made by his friends and students a festival of three days' duration.

Luminous Paint in Theatres.—Herr Stehle, the Government Inspector of the Royal Bavarian Court Theatre, has, according to *Iron*, given high testimony to the use of luminous paint as a safeguard against panic in theatres. Any explosion or disaster with gas leaves the exit passage of the theatre in total darkness, and even if additional oil lamps were used, they would probably be extinguished by the air concussion. In the above-named theatre inscriptions in luminous paint are suspended over the exit passages, which direct the audience to the "way out" (*Ausgang*). "These placards, in spite of being exposed to the very poor light of the corridors in the daytime and the gaslight in the evening, are so luminous after the gas has been turned out that anyone can gain the stairs in each corridor without difficulty." The precaution is so simple and inexpensive that we wonder it is not immediately adopted in all theatres. Indeed, we see no reason why its use should not be made compulsory. Surely some provision of this kind might be included in the Theatres Bill now before Parliament.—*Lancet*, May 14, 1887.

Flavoring Extracts—Are they Poisonous?—Cooks, confectioners, and others engaged in the preparation of foods and drinks are in the habit of using various artificial perfumes, which in chemical language are such bodies as amylic valerianate, amylic butyrate, ethylic butyrate, propylic ether, and caprylic alcohol. The odor and flavor of the apple, the pear, the pineapple, the strawberry, and the raspberry can thus be imitated. These imitations not only remove the necessity for the use of the natural fruits, but are less expensive, and, besides having perfect similitude with them, give the appropriate flavor in a more accentuated form. MM. Poincaré and Vallois have sought to ascertain whether these artificially prepared perfumes possess poisonous properties by injecting them under the skin of animals, as well as introducing them into the stomach. Dogs and guinea-pigs can withstand even large doses of these substances when injected under the skin; but these animals can be poisoned by sufficiently large doses, and then the symptoms set in rapidly. The most constant toxic symptom was great prostration, which was followed in a variable time by coma. These phenomena were less marked in the dog than the guinea-pig. All the animals were troubled with violent nasal irritation and sneezing, and distressed breathing was always evidenced by overaction of the respiratory muscles. An excessive secretion of mucus from the bronchial tubes was also noticed. Notwithstanding the gravity of the symptoms, the majority of the animals recovered. The practical outcome of these experiments is to sanction the use of infinitesimal doses such as are already employed for artificial flavoring of aliments.—*Zymotechnic Magazine.*

Trespassing Practitioners.—The *New York Medical Journal* of July 16, 1887, thus surveys the field of medicine, in which the medical men of different countries show a disposition to overstep limits prescribed by national boundaries:

The Chicago *Inter-Ocean* having complained, rather unnecessarily, we think, that the Canadians do not recognize American degrees as a title to practise in the Dominion, the Canada *Lancet* publishes a very judicious editorial article in which it sufficiently explains that in this fact there is no real occasion for ill feeling. It carries its frankness so far as to acknowledge that the better American schools are superior to those of its own country, but it adds, quite correctly, that there are other American schools which are so far below the Canadian standard that, without an invidious distinction being made, it is impossible for the Canadians to register American practitioners on the mere ground of the degree. On the other hand, the *Medical Press and Circular*, of London, grumbles about the number of German doctors who make incursions into the United Kingdom for the purpose of drumming up remunerative practice. Whereupon the *Deutsche Medizinal-Zeitung* pointedly remarks: "Und Mackenzie?"

Hypnotic Exhibitions Forbidden in French Theatres.—The municipal authorities of Bordeaux have forbidden the public exhibitions of two hypnotizers in one of the theatres of the city. The occurrence of accidents to those hypnotized occasioned the action.

Artificial Climates for Invalids.—In the belief that modern science can command climate, Dr. B. W. Richardson proposes that British invalids be given in their native isles the winter advantages of tropical resorts. This he would accomplish by establishing winter homes, or health palaces, each containing fifty or more comfortable two-story houses, enclosing a large square of ornamental grounds, and provided with libraries, baths, gymnasia, amusement halls, etc. Flower-lined galleries, giving long promenades, would extend over the houses under glass roofs, while the central enclosure would be shut in by an immense arch of glass at a great height above the ground. Suitable heating and venti-

lating apparatus would give an equable and adjustable temperature to all parts of the structures, and any desired character might be imparted to the climate. Even cloudy days need not be known, as electric suns could be made to shine at pleasure. In many places winter resorts on a grander scale might be created by putting whole valleys under roofs of glass, forming parks of constant beauty and healthfulness.—*American Analyst*, July, 1887.

MORTALITY AT THE PANAMA CANAL.—When this gigantic undertaking, which is gradually approaching completion, is finished, the medical history of the undertaking ought to be written. A statement was recently made, on apparently good authority, to the effect that the annual mortality amounted to the appalling percentage of 60 for the colored laborers and 80 for the white. These figures are very much greater than are justified by statistics, for, according to an official document recently published, the average annual mortality on the works does not exceed 10 per cent., but even this figure is fearfully high. Probably very few enterprises in modern times have proved as fatal to the men engaged as this one, a result which is attributable to the extremely unhealthy nature of the climate and also to the insanitary conditions under which these large aggregations of men have had to live. The mortality at the commencement of the excavations was still higher, but the company has recently become alive to the fact that this high rate of mortality is very expensive, and have, therefore, taken some steps to render the dwellings and manner of living of the men less prejudicial to health and life. Unfortunately the disease and mortality statistics of such undertakings are almost invariably kept in a very perfunctory style. It would have been very instructive to have had some information with respect to death from disease and accident among the men employed in carrying out the recent metropolitan improvements. It would probably have been made apparent that the soil of old cities like London cannot be disturbed on a large scale without a corresponding tribute of mortality. The tunnel which is shortly to be driven beneath the Thames offers an excellent opportunity for the collection of precisely this kind of information.—*British Medical Journal*, July 9, 1887.

A VETERAN ANATOMIST.—On April 30th, at 11 A.M., the Anatomical Theatre of the Imperial Medico-Chirurgical Academy of St. Petersburg was the scene of a lively and noteworthy gathering of physicians, surgeons, students, and deputies from numerous learned societies, lay and medical, from every part of Russia, to congratulate Professor Wenzell Gruber upon his having held the professorship of practical anatomy for no less a period than twoscore years. During that time Dr. Gruber, besides having instructed, examined, and passed 8000 medical students in practical anatomy, has himself dissected, or superintended the dissection of, upward of 30,000 bodies. His talents, when Hyrtl's demonstrator in Prague (from 1844 to 1847), having been noticed by the late Prof. Pirogoff, he was invited by the eminent Russian surgeon to St. Petersburg, where he at once received the appointment of Demonstrator of Anatomy at the Imperial Medico-Chirurgical Academy.

From various parts of the world there were eighty telegrams sent to the veteran anatomist, while upward of twenty gorgeously illuminated and bound addresses from different societies congratulated him on the completion of his fortieth year of professorship. A large gold medal, struck in his honor, was presented to him, while a copy of it in silver was struck for and presented to Mrs. Gruber. On one side of the medal are the Christian and family names of Gruber, and below a very good likeness of him; the finely shaped oval head, the high and full brow, the thick, bushy head of hair, and the rounded and beautifully chiselled chin are admirably portrayed by the sculptor. The reverse of the medal presents, in its centre, the large Roman numerals XL.; below the inscription is 1847–1887; while above is written: "To the teacher of 8000 Russian surgeons." A splendid album, containing upward of sixty original paintings in oil and water-colors, was presented to him by some of the first artists in Russia. The emperor created him a Knight of the White Eagle, one of the highest of Russian orders. Indeed, there was no end of telegrams, addresses, memorials, and speeches—all tending to show how deeply respected and beloved Gruber is, alike by colleagues, pupils, and the public in general. So remarkably prolific a writer is Gruber that during forty-three years, the number of his published anatomical memoirs and pamphlets exceeds 540—a proof that the anatomists of a bygone age were generous enough to leave something for their followers to do and discover.—*Lancet*, July 9, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JULY 26 TO AUGUST 1, 1887.

MAGRUDER, D. L., *Colonel and Surgeon.*—Granted leave of absence for one month, to take effect on or about August 10, 1887. *S. O. 170, A. G. O.*, July 25, 1887.

MCCLELLAN, ELY, *Major and Surgeon.*—Detailed as a member of a board of survey, to meet at the Medical Purveying Depot, St. Louis, Mo., on August 1, 1887.—*S. O. 173, A. G. O.*, July 28, 1887.

CALDWELL, D. G., *Major and Surgeon.*—Order relieving him from duty at Fort D. A. Russell, Wyoming Territory, and assigning him to duty at Fort Assiniboine, Montana Territory, is revoked.—*S. O. 168, A. G. O.*, July 22, 1887.

CLEARY, P. J. A., *Major and Surgeon.*—Ordered to Fort Assiniboine, Montana Territory, instead of Fort D. A. Russell, Wyoming Territory.—*S. O. 168, A. G. O.*, July 22, 1887.

BURTON, H. G., *Captain and Assistant Surgeon.*—Sick leave of absence extended three months.—*S. O. 171, A. G. O.*, July 26, 1887.

GARDNER, E. F., *Captain and Assistant Surgeon.*—Ordered for duty at Fort Keno, Indian Territory.—*S. O. 170, A. G. O.*, July 25, 1887.

MCCAW, W. D., *First Lieutenant and Assistant Surgeon.*—Ordered for temporary duty at Fort Riley, Kansas.—*S. O. 78, Department of Missouri*, July 25, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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ORIGINAL LECTURES.

ON SOME OF THE PROBLEMS TO BE SOLVED BY PHARMACO-PHYSIOLOGY,

WITH A NEW OUTLINE CLASSIFICATION OF PHARMACOLOGY.

A Lecture

Delivered before the advanced class of students in physiology in the Biological Laboratory of the Johns Hopkins University, May 9, 1887.

BY H. G. BEVER, M.D.,

PASSED ASSISTANT SURGEON, UNITED STATES NAVY; FELLOW, BY COURTESY, OF THE JOHN HOPKINS UNIVERSITY.

GENTLEMEN: In response to an invitation to speak before you on some of the problems to be solved by experimental physiology, I have selected the subject of the physiological action of drugs, not only because it has interested me for a number of years, but also because it is one which will illustrate to you better than any other some of the applications of that experimental science, in the practice of which you are now being drilled and educated.

The study of the physiological action of drugs, however, forms but a part of experimental pharmacology; and, therefore, before proceeding to treat of the special subject of this lecture I have deemed it most desirable, for several reasons, to say a few words with regard to pharmacology in general.

I do this not merely for the purpose of calling your attention to the important position which pharmacology itself has assumed within late years among other sciences, but also in order to enable you better to understand and realize the close and intimate connection which exists between it and physiology, as well as other sciences, with which it is more or less intimately connected.

The term pharmacology conveys, perhaps, to some of you but a vague, indefinite idea of a certain knowledge of drugs, and their action upon the animal organism, necessary though it be for the physician to possess, otherwise of very little general interest. I hope, however, to convince you that pharmacology, in the widest sense, is not only a necessary accomplishment of the physician, but also that it is full of interest to the general biologist.

Being largely dependent on chemistry and physiology, as a separate science, it must naturally be looked upon as of rather recent date, though its name is as old as that of medicine itself. Unlike other sciences, it cannot be considered a simple outgrowth of one mother science, or as a more highly specialized branch of any one single science, as, for instance, pathology is in its relation to physiology, or, as the latter may be regarded, an offspring of anatomy; but, on the contrary, it includes and harmoniously unites several of these, making them all subservient to its peculiar end.

The classifications and subdivisions of pharmacology which we find in some of our best text-books even at the present day can, in our opinion, hardly be looked upon as at all satisfactory, much to the disadvantage of both teacher and student, but especially the latter. As pharmacology is increasing more and more in importance, a more concise and comprehensive classification and subdivision of this subject is becoming with every day more and more of a desideratum.

Having had under my charge the National Collection of Drugs at Washington during the past three years, which is perhaps the most extensive and complete collection of any we possess in this country, and having, besides, been more or less actively engaged in the investigation of the action of drugs during the same period, the question of the desirability of a new classification has frequently forced itself upon my mind, and a very puzzling one it is, too. Much might be said as to the advantages and disadvantages of the old standard division of the subject into materia medica and therapeutics, or that into pharmacology, materia medica, and therapeutics; but, without taking up your time in criticising the old, allow me to invite you to look at a new one.

This classification seems to me a considerable improvement over the old, and would, if accepted, undoubtedly do much to bring order into what, it may be said, is chaos now. The latter is more especially true for the minds of the students of this department of medicine.

Beginning with the definition of the term pharmacology itself, I need scarcely remind you of the fact that it is a word, like a great many others, which has been derived from the Greek, and simply means a knowledge of the substances known as drugs and employed as remedies. This term forms a very happy expression for the subject under consideration, and is consequently retained in this classification, as including everything relating to the subject.

The first great subdivision of pharmacology into (1) descriptive, and (2) experimental, is, I think, equally natural, expressing, as it does, the two mainsprings from which all our knowledge is derived, and as indicating, at the same time, the two main lines along which pharmacology must be studied and extended.

Since all those substances which ordinarily we call remedies are derived from either of the three natural kingdoms, descriptive pharmacology, furthermore, might be conveniently treated of under the three following heads, namely: Pharmaco-mineralogy, pharmaco-botany, and pharmaco-zoölogy. By descriptive pharmacology, and, as is indicated by the terms of its three subdivisions, we would, therefore, include not only a superficial acquaintance with the mere external or physical characteristics of the drugs derived from these three sources, a branch of pharmacology hitherto designated by the term pharmacognosy, but a more profound knowledge of the significance of the princi-

ples of mineralogy, botany, and zoology in their relation to those substances which are derived from them.

I will illustrate what is meant by these terms by defining very briefly the term pharmaco-botany, choosing this one because it forms the best example, and most of the drugs now used are derived from the vegetable kingdom. I hold that without a knowledge of botany and its principles, or, in other words, the biology of plants, a sound knowledge of drugs is impossible. The mere enumeration of the outward appearances of roots, stems, leaves, and flowers, of the different plants which furnish us with drugs, may perhaps sound like music to some, but it is at best music without a soul or expression. It is still within my recollection when true roots, rhizomes and tubers were all included under the head of "radix," simply for the reason that they grew under ground. The fact that we now distinguish radices, rhizomata and tubera, I need not tell you is due to a study of their morphology, which distinguishes plainly and concisely one from the other; hence, it must be evident that without a knowledge of plant morphology, pharmacognosy is a mere mechanical accomplishment of the memory, and without a scientific basis.

We know, furthermore, that as we pass from the cryptogams on to the flowering plants, different, and at the same time characteristic chemical constituents are found, which are peculiar to the different classes and genera; and not only so, but each individual plant, in accordance with its different stages of development, contains different chemical constituents. The chemical constituents of plants, however, are the products of their physiology, which becomes more complicated and perfect in plants as well as animals as we pass from the lower to the higher orders. Hence, without a knowledge of plant physiology we should find ourselves without a guide as to what kind of substances we should expect to find in this or the other plant. Vegetable morphology and physiology are, therefore, necessary accomplishments of the pharmaco-botanist and the general pharmacologist.

The term "experimental pharmacology," forming the second main division in this classification, is here made to include all that knowledge regarding drugs which is derived directly from experiments made in the laboratory. The experiments, however, made with drugs in the laboratory, being of necessity either physical, chemical, physiological, or pathological, the four subdivisions of this part of our science into pharmaco-physics, pharmaco-chemistry, pharmaco-physiology, and pharmaco-pathology, seem to follow quite naturally.

Under the head of pharmaco-chemistry, it would seem desirable to include not only a knowledge of the means and methods by which drugs are obtained from their natural sources (pharmacy), but also a practical knowledge of the far more important and complex problems of analyzing these substances and ascertaining, so far as can be done at present, the chemical constitution of them, with the view of preparing them artificially, and of artificially altering their composition in accordance with the demands of pharmaco-therapy.

By "pharmaco-physiology," we mean to designate that part of pharmacology which deals with all those most intricate and important problems bearing upon the action of drugs upon the normal, living animal organism and its various parts; it has, furthermore, for its object the scientific explanation of such action; it is the greatest enemy of empirical pharmacology. The pharmaco-physiologist studies the relation which exists between the chemical constitution of a remedy and its physiological action, and it is in this field of investigation more especially, that we may look for the production of the most exact and the most important results in the near future. Without a knowledge of the chemical constitution and physiological action of those substances which we call remedies, their administration in disease cannot be said to rest on anything like a scientific basis, but must be purely empirical, and the good effect which, in some cases, it produces, must be looked upon more as a fortunate circumstance than a logical sequence.

By the term "pharmaco-pathology" it is intended to designate that branch of pharmacology which has to deal with the study of the action of drugs on the animal organism in a state of disease, and under this head both man and animals might be included. This division of the subject, therefore, is made to comprise both human and comparative pharmaco-pathology, and its laboratory is the hospital.

From what has been said, it is evident that the practical or experimental pharmacologist must be master, at least to a certain extent, of chemistry, physiology, and pathology; that his laboratory, to be complete, must be equipped with chemical and physiological apparatus, and be in close intimate relations with a well-organized and well-disciplined hospital and, if possible, also with a hospital for the treatment of the diseases of the lower animals. It is and must be admitted that the administration of drugs in disease, even in this enlightened age, is to a large extent still experimental, and that part of it, which cannot be called experimental, is empirical. Those who would reject as inhuman, experiments with drugs on the lower animals, would indeed do well to remember that they themselves at any moment, and quite unknowingly, may become the willing victims of such experimentation at the hands of much more ignorant experimenters than are usually allowed to engage in such experimentation on frogs, rabbits, and dogs. The pharmaco-pathologist, therefore, studying the action of drugs principally upon man in a state of disease, performs the most responsible part of the duties of the general pharmacologist. He should, accordingly, undertake his part of the task only with the aid of all the light which chemistry and physiology have already thrown upon the nature and action of the remedy which he is about to administer, with the final aim of relieving human suffering, or even with a view of saving valuable human lives.

There are, however, also remedial agents, such as electricity, heat, cold, water, climate, condensed and rarefied air, gymnastics, and massage, which are of considerable importance in the treatment of disease, and a classification of the subject of pharmacology, claiming to be complete, cannot afford to set these aside. These being mainly physical agents, I have thought it best to include them all under the term pharmaco-physics.

There still remains to be defined that most august term, "pharmacotherapy," or, the science of curing disease by means of remedies. What shall we do with it? Up to the present we can hardly speak of pharmacotherapy as being more than an ideal; it is a science of

the future much more than of the present, to be established by experimental pharmacology. It will not be until experimental pharmacology has placed in our possession a much more accurate knowledge of the chemical nature, and of the action of drugs, in both normal and pathological states, that we have any right to claim as ours the knowledge of the cure of disease by means of remedies. Pharmaco-therapy, as indicated by our classification, is applied pharmacology, it is the practical outcome of the latter, and, although the result of experimental pharmacology, it is itself, or should be, placed *beyond the range of experimentation.*

To sum up briefly, pharmacology may be said to have for its purpose the study and investigations leading to a perfect knowledge of drugs and their actions; the mineral, vegetable, and animal kingdoms are the natural sources from which these are derived; physics, chemistry, physiology, and pathology are the means which it employs in the determination of their properties and pharmaco-therapy, or the knowledge of the cure of disease by scientific methods, is its great aim and end.

Pharmaco-physiology, then, according to the definition above attached to this term, has for its object the scientific study and investigation of the action of drugs on the normal living animal organism and its various parts.

It would, of course, require a whole course of lectures to treat of this subject in an exhaustive manner, and I have only time to speak of a few of the more important problems which are now before the pharmaco-physiologist. One of these, no doubt, is the study of the relation which exists between the chemical constitution of certain substances and their physiological action.

Assuming that you all know, more or less, of the fundamental principles upon which rests our present classification of the elements into definite and related groups, and that you are, furthermore, acquainted with the circumstances which led to the discovery of the metals gallium, germanium, and scandium, which were all accurately described by Mendejleff before being discovered to fill a certain gap in a group, it must likewise be the great and final object of the pharmacologist to obtain such a knowledge of the existing relations between the chemical and physical characters of substances, and their actions upon the living organism that we may be able to predict their actions with certainty.

Mercury and calcium, at first sight certainly, do not resemble one another very much, and yet it has been shown by Provost that in acute poisoning by mercury, the calcareous matters disappear from the bones and in the process of elimination by the kidneys, produce calcification of these organs.

We find that each element and each of its various compounds has chemical reactions special to itself by which it can be recognized and distinguished from all others. The number of these chemical reactions is, therefore, very large, but there are a few which are common to a large number of the elements.

We shall find that something similar occurs in their physiological reactions, just as we can divide and subdivide the elements and their compounds into groups and subgroups by a careful study and comparison of their chemical reactions, so we may also divide and classify drugs according their physiological reactions.

In the language of Dr. Lauder Brunton, the physiological reactions which occur between the elements and their compounds and the tissues of the body can be subdivided into large groups. Thus, we find that a very large number of substances, when used in large quantity paralyze muscles and motor nerves. This large group may again be subdivided into those which paralyze muscle while affecting the nerves but slightly, and those which paralyze the nerves and leave the muscle uninjured.

Another large group is that which acts especially on nerve-centres, and has little effect either on muscle or motor nerves. This group contains subgroups of substances which affect the brain, medulla, or spinal cord by exciting, paralyzing, or disturbing their functions.

Another group is that which chiefly affects the circulatory organs, and still another that which influences the secretions, with subgroups of substances affecting more particularly the secretory activity of the sweat glands, mammary glands, the salivary or intestinal glands, the liver, or the kidneys.

As a very striking instance and as one well calculated to impress upon you the intimate and, at the same time, important relation between physiological discoveries and pharmacological progress, I may cite the following, viz.: Those of you who have lately had the good fortune of listening to the very interesting lectures given in this laboratory by Dr. W. H. Howell, on the subject of "Secretion," are well acquainted with the brilliant results obtained by Heidenhain and his pupils as regards glandular function. Based mainly on these recent advances in physiological science, pharmacologists, it seems to me, are already beginning to turn their attention to the study of the action of drugs upon glandular activity, and some far-reaching results in this line of research may be looked for in the near future. For instance, it is a fairly well-settled question in physiology that the epithelia lining the convoluted tubules of the kidneys are the structures principally concerned in the excretion of the solid constituents of the urine, and that the epithelium lining or covering the glomeruli is the tissue chiefly engaged in the secretion of the watery constituents of the urine; blood pressure, *cæteris paribus*, taking a subordinate position to cellular activity and not a primary one as was formerly supposed to be the case.

Dr. von Schröder, of Strassburg, Germany, in a beautiful series of experiments, has succeeded in conclusively demonstrating, at least to my mind, the fact that caffeine, injected into the circulation, gives rise to a much increased flow of normal urine. From our knowledge of the physiological activity of this organ and his experiments, there is but one conclusion possible, and that is, that caffeine, in some way, exercises a stimulatory influence upon the epithelial lining of the convoluted tubules, and perhaps also that lining the capsule.

A number of questions at once arise, and since they attach themselves almost naturally to the one under consideration, we cannot do better than discuss a few of these, inasmuch as they seem to me particularly well intended to illustrate to you the kinds of problems which the pharmaco-physiologist has to solve, and the close and intimate relation they bear to physiology.

Although I have, as yet, seen no reference made to any of these which will here be mentioned, they must

necessarily of use to any one who thinks at all on what he reads. So far as is known up to the present, renal secretion is not excited by the stimulation of any nerves which would correspond to the so-called secretory nerves in other glands; and the kidney, therefore, differs in this respect from the salivary and sweat glands, both of which can be excited to functional activity by the stimulation of certain efferent nerves.

We must now ask ourselves: Does caffeine affect these glands similarly? and if so, how does it do so? If it does so, does it effect its results by influencing secretory nerve structures, or does it produce increased secretion through its direct action on glandular epithelium? In case that caffeine should be found to produce an increased flow of saliva by either stimulating secretory nerve-structures or the glandular epithelium, have we here a possible argument in favor of the presence of secretory nerve-fibres in the kidneys?

Again, atropin puts a stop to the secretory activity of salivary glands, because, as we say, it paralyzes the terminations of the secretory nerves in these glands, and the question at once arises, in consideration of the above facts, Does atropin have the same effect upon the kidney? and if not so, would we here have an argument in favor of the absence of secretory nerves in these organs?

All these are questions of vital importance, and must be and will be answered in the near future by some one; they well illustrate the nature of those problems which the pharmaco-physiologist has to deal with, as well as the intimate relations existing between himself and the physiologist.

There are perhaps objections made by some to the results obtained by von Schröder. There are, as a rule, many more objectors than experimenters, and if there is any possible fault or flaw in von Schröder's method of experimentation, let us see what it might be, for sooner or later we will be called upon to answer such objections. Von Schröder tells us that he chloralized his rabbits before he injected his caffeine, in order to eliminate as much as possible the stimulating influence of caffeine on the vasomotor centre in the medulla. According to experiments by Binz and Mayer, chloral, trichlor-acetic acid—in fact, all easily decomposable halogen derivations of certain organic substances—by setting their chlorine, bromine, or iodine free, depress, or, for the time being, may even totally paralyze cellular activity. From this influence, according to Binz and Mayer, neither vegetable nor animal cells are exempt. It is evident, therefore, that, providing Binz and Mayer are correct, the results obtained by Schröder may be misleading. In my opinion, these objections if even they are well founded, would impair the value of von Schröder's results in a certain degree only. All that can be maintained against them is, that his standard of comparison is a subnormal rather than a normal one, while the interesting and principal fact remains, namely, that caffeine arouses the renal epithelium to activity, whether it be in a normal or subnormal condition at the time of its exposure to the influence of caffeine.

The physiological action of any drug depends, to a great extent, not only on its general affinities for certain classes of tissues, but also upon its peculiar affinity or power of acting on one tissue or organ first, and the organ thus affected, through its functional activity, being modified, may greatly alter the effects of the same drug on others.

As a very good example of this we may take the effects produced by very large and moderate doses of veratrine on the frog. A moderate dose will produce great stiffness of the muscles, while a very large dose may have comparatively little effect. Yet, if the large dose were applied directly to the muscles, it would act more powerfully than the moderate dose. The reason why it does not do so in the living body is, that the circulation stops; and, therefore, the poison not being conveyed to them, has no action on the muscles.

With regard to the relation existing between atomic weight and physiological action, we have as yet no very clear conception, so far as the results attained from experiments in that direction allow us to judge. There is, however, a field opened to the investigating pharmacologist which, as experiments tend to show, is promising of great results, and this consists in the study of the relation which exists between chemical constitution and the physiological action of certain substances. It has been shown by the discoveries of Crum Brown, Fraser, and Schraff, that by artificially modifying the chemical constitution of a drug, it is possible to modify also its physiological action, and that similar modifications in chemical constitution induce similar modifications in the action of their derivatives. Thus, they have shown that by introducing methyl into the molecule of strychnine, brucine, and thebaine, the convulsive action exerted by these substances on the spinal cord was changed into a paralyzing one exerted on the ends of the motor nerves. Besides these, other alkaloids which ordinarily do not exhibit a convulsive action, exhibit a paralyzing one when their constitution is modified by the introduction of methyl into their normal constituent molecules; thus, methyl-morphine, methyl-nicotine, methyl-atropine, methyl-quinine, and methyl-veratrine, and several others, all exhibit this paralyzing action. A number of experiments made with regard to this point by Drs. Lauder Brunton and Cash seem to show that, as a general rule, most of the compound radicles formed by the union of amidogen with the radicles of the marsh-gas series possess a paralyzing action on motor nerves.

The subject of the relation between chemical constitution and physiological action is at present one of the most important problems to be solved in pharmacology. Already many of the most important alkaloids, derived ordinarily from the vegetable kingdom, have been produced artificially in the laboratory, and their chemical constitution has been studied with results more or less satisfactory in the different cases. Thus, for instance, caffeine has been found to be a tri-methylxanthin. Hydroxyl, methoxyl, and ethoxyl have been introduced, and characteristic changes in the action of the resulting compounds have resulted. Filehne, in experimenting with hydroxy-caffeine, found that it required nearly twenty-five times the dose to produce the rigidity of the muscular system of the frog that it did when unmodified caffeine was used, and that the dihydroxy-caffeine produced no effect whatever on the muscular system. The physiological action of ethoxy-caffeine seems no less remarkable, for, instead of producing rigidity and tetanic spasms, it seems to have the directly opposite effect, namely, that of producing diminished reflex ex-

citability, and in the higher animals, rabbits, and man, sleep and intellectual torpor are produced.

These modified caffeines have already been made use of in pharmaco-therapy, and a number of cases already stand recorded in which painful neuralgias of various parts of the body have been successfully treated by means of them.

The chemical study of drugs and their artificial production in the laboratory have, however, another important advantage, more especially for the physiologist. The explanation of the normal action of a highly complex alkaloid upon a still more highly complex and complicated organism, has at all times been the greatest difficulty in the way of the pharmaco-physiologist. Most of our difficulties to explain aright the manner of action of substances on the animal organism, are directly traceable to this double complexity. And yet there is, perhaps, no question that I have been asked more often in connection with my own investigations, and by men of very high standing in the medical profession, than the one, Why do you isolate your organs, and why do you want to split up your alkaloids?

It is not too much to say that, among the many drugs which we possess and administer in large quantity every day to a host of suffering invalids, there are, even in this enlightened age, scarcely half a dozen the physiological action of which is at all well understood, and perhaps not one on the nature of the action of which there is no doubt whatever left. This is evidently due to nothing else than the very complex constitution of the remedies employed, and the many possibilities of their acting on this or that class of tissues with greater or less affinity than on others. Hence, the great tendency of the present day; and, in fact, the only way left open to us as investigators of this line of research out of the difficulty is, first, the simplifying, as far as that can be done, of this great living machine into its constituent organs and tissues—in other words, the successful isolation of these organs from the rest of the body and the keeping them alive for a certain length of time, and, on the other hand, the simplification of the drugs and substances the action of which is to be ascertained.

It is for these very potent reasons that the successful isolation of any organ of the body without impairing, at least for a time, its normal functional activity, must be looked upon as a most important and fortunate step in the direction toward the solution of a multitude of physiological as well as pharmacological problems which could otherwise never have been even approached. And so, also, the simplification of those substances which we must recognize as highly complex into their constituent residues or molecules, must be looked upon as of parallel importance.

For the purpose of rendering this question a little clearer, we will take the case of atropine. From the large number of experiments made with this drug we have now abundant proof of the multiplicity of tissues that are influenced by it and also of the complexity of its action on any one organ or tissue. Confining ourselves to the action of atropine on the nerve terminations in certain viscera, we have, furthermore, very good proof that it affects two kinds of nerve structures simultaneously and similarly. The organs, like the heart, the pupil, and the intestines, which have been shown by Gaskell to be supplied by two classes of efferent nerves namely, motor and inhibitory, we have evidence of atropine stimulating and finally paralyzing both these structures.

This fact, however, could only be rendered capable of solution by a study of the action of atropine on isolated organs. The question now arises, Can we still further prove by much more accurate experiments than have been made hitherto, that atropine really affects both motor and inhibitory nerve-fibres?

We will see!

Some years ago Kraut and Lossen succeeded in splitting up the alkaloid atropine into tropine and tropic acid. Lossen more especially succeeded in showing that the decomposition mentioned went on according to the following equation:

$$C_{17}H_{23}NO_3 + H_2O = C_8H_{15}NO + C_9H_{10}O_3.$$

Ladenburg, in 1881, finally succeeded in producing atropine by synthesis from tropine and tropic acid by first neutralizing a solution of tropic acid with tropine, thus producing tropine trobate, and then boiling this compound with a small quantity of hydrochloric acid. The result of this procedure was a substance absolutely identical with atropine obtained in the natural way in all its chemical as well as physiological properties. The chemical identity was established by Ladenburg himself, the necessary physiological experiments were made principally by Profs. Hensen and Falck, who found, among other results, that the artificial drug antagonized muscarine stand-still of the heart, dilated the pupil, etc., in every way as the natural substance did.

According to the same method, Ladenburg undertook to manufacture certain other so-called semi-artificial atropines, called by him tropeines, in which the tropic acid molecule was replaced by a molecule of some other suitable acid.

Without going into a detailed account of the chemical and physiological properties of all these tropeines, it suffices for my purpose simply to call your attention to the important fact that with the substitution of tropic acid by other acids, went hand in hand a change in the physiological effects of the resulting compounds. Experimenting principally on the pupil, Hensen, Falck, and Volkers found that in most, if not all, tropeines dilatation was either not at all produced or very slightly so in comparison with atropine.

It was, therefore, not unreasonable to suppose that there exists a certain relation between this molecule and its physiological effect of dilating the pupil. According to Gaskell, moreover, the dilatation of the pupil is the result of stimulation of certain dilator fibres belonging to the class of inhibitory nerve-fibres, the innervation of the pupil being, in fact, similar to the innervation of the heart, the viscera, etc., and the question at once arose, Is the dilatation of the pupil by atropine due to the action upon these dilator fibres of the tropic acid molecule contained in atropine? and if so, Does this molecule similarly affect other nerve-structures, the histological structure and physiological function of which are identical with those of the dilator fibres of the pupil?

To investigate this point was the object I had in some experiments made in this laboratory during the last month.

The pupil did not seem to me a satisfactory organ of

the experimental investigation of this problem, and I, therefore, concluded to try the bloodvessels.

Through the kindness of Prof. Remsen, I was able to interest Mr. Lengfeld in the work, and he kindly consented to split up some atropine for me, into tropin and tropic acid. In the experiments on the bloodvessels, tropin was used in the form of the hydrochlorate; and the tropic acid as sodium tropate. Suffice it to say here, that it was found that sodium tropate caused vaso-dilatation, while tropine hydrochlorate gave rise to vaso-constriction. We have here, then, another very good example illustrative of the manner in which pharmacological problems must be solved, and, also, of the close relation which must always exist and be kept in mind, between chemical constitution and physiological action.

ORIGINAL ARTICLES.

FORMS OF TYPHOID FEVER SIMULATING REMITTENT MALARIAL FEVER.[1]

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THE diagnosis of typhoid fever is often attended with especial difficulty in malarious localities, where it may closely simulate remittent malarial fever. Nearly all physicians practising where malaria prevails, are in the habit of treating cases that differ in important particulars from each of these affections, and yet present certain combined features of both. These cases are usually observed during the late summer and early autumn months, when both typhoid and remittent fevers most prevail. The concurrence of these two fevers had long ago been observed, but since the coining of the term "typho-malarial fever" by the late Dr. J. J. Woodward, in 1863,[2] our medical literature has been rather unduly burdened with its consideration.

It is hardly worth while to-day to discuss "typho-malarial fever" as an integral affection; even Dr. Woodward seems to have been misunderstood in his original definition of its nature, for at the International Medical Congress of 1876 he declared the term to be "conveniently applied to the compound forms of fever which result from the combined influence of the causes of the malarious fevers and of typhoid fever."[3] It must be conceded that this combination of the two specific poisons is frequently observed, but at the same time there can be no doubt that the widespread adoption of Dr. Woodward's terminology has not been advantageous, either to the study of the diseases involved or to their therapeusis: for upon the one hand there is encouraged an indolent consideration of their complex symptoms, and upon the other a tendency to treat the malarial at the expense of the typhoid elements of the disorder, usually to the decided disadvantage of the patient.

It is not my object in this paper to consider that aspect of the question in which the characteristic symptoms of typhoid fever exist in combination with equally characteristic symptoms of remittent malarial fever. It is at once granted that malaria may influence typhoid fever, just as it may modify pneumonia, dysentery, and other acute affections. Nor is it my purpose to refer more than briefly to those conditions occurring in malarious regions, where at the outset symptoms of remittent fever predominate, and not until later give place to the characteristic symptoms of typhoid fever, and but too frequently lead to the disingenuous diagnosis that a remittent has become transmuted to a typhoid fever.

Nor shall I engage in the discussion of that view of the subject that finds its most distinguished exponent in Loomis, and that denies to typhoid fever any part in the morbid processes that have received wide recognition as "typho-malarial fever," and ascribes them to a combination of a malarial and a septic element, under the title of "continued malarial fever," further than to claim that the history, course, symptomatology, and pathology of the affection so closely resemble those of typhoid fever that it is impossible to indicate any feature differing from those of the latter affection to an extent greater than can be accounted for by a complicating malarial element; and, furthermore, that the term "sepsis," in this connection, has not sufficient definiteness. Within limits it may satisfactorily account for anomalous cases in given localities, but it is impossible that such a septic influence should be so widespread as to produce the conditions under consideration, and yet fail to make itself manifest in other than malarial patients.

Finally, I shall not discuss the theory that "typho-malarial fever" is essentially malarial, a theory that has recently received support in Great Britain, and according to which it is a form of malarial fever in which intestinal and adynamic symptoms predominate.[1]

Tempting as these subjects are, they are considered from such different standpoints, and represent such differences of opinion, that one can at present hardly hope to reconcile them. One point, at least, is apparent: "typho-malarial fever," hybrid as it is, is far from including any definite pathological series, but is made to serve as the limbo into which writers crowd many groups of atypical cases. The object of the present paper is to direct more especial attention to a class of cases of continued fever in which the absence of nearly all characteristic symptoms except the fever has influenced medical men in malarious districts, at least, in assigning them to remittent malarial fever, and not to typhoid fever, to which disorder they properly belong.

Such cases are commonly encountered during the late summer and early autumn, though no season is without them. Beginning abruptly with slight chill, or insidiously, they run the course of remittent fever of mild type, either with slight variation of temperature, or of greater intensity with well-marked remissions, never passing into a typhoid condition, never developing the characteristic symptoms of typhoid fever, yet absolutely uninfluenced in their duration by anti periodic treatment, running a course of three, four, or even five weeks, and terminating almost invariably by slow lysis and recovery.

[1] Read at the meeting of the Association of American Physicians, Washington, June 2, 1887.

[2] Outlines of the Chief Camp Diseases of the U. S. Armies, 1863.

[3] Trans. Internat. Med. Congress, Philadelphia, 1876, p. 345.

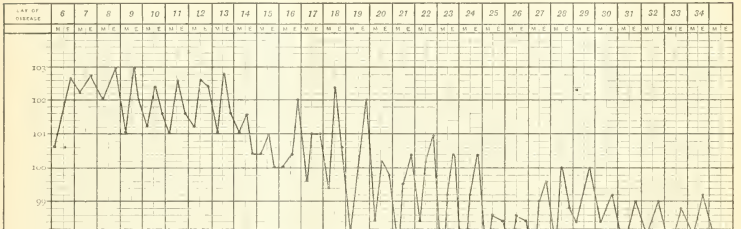
[1] Squire: Lancet, 1887, I., 73. Jagoe: Ibid., 1887, I., 119.

These cases are at first almost always regarded as of remittent malarial fever. From beginning to end they may develop no symptom that could not belong to this disorder, except the persistence of fever under strongly anti-malarial treatment, and the occasional concurrence of circumstances that point to a typhoid origin. There is no intellectual cloudiness or hebetude of expression. Sleep is but slightly disturbed. The tongue remains moist and coated with a thin whitish or yellowish fur; the appetite persists very often in some degree. There is almost never epistaxis. Constipation is commonly observed, diarrhœa very rarely. There are no bloody stools, no tympanites, no iliac tenderness or gurgling. Rose-spots are much more often absent than present. The patient can be restrained in bed with difficulty or under protest. Slight enlargement of the spleen may occasionally be detected, but is more frequently not observed. More severe cases, beginning more or less abruptly, develop primarily the symptoms of remittent fever, and diagnostic doubts only arise when the absolute resistance to anti-periodic treatment and the gradual appearance of typhoid symptoms excite suspicions of the incorrectness of the original diagnosis. These latter are the cases that, now correctly, again incorrectly, suggesting the combined influence of two specific morbific poisons, are dubbed, by most practitioners in malarious districts, "typho-malarial fever."

From my note-books I have selected the following cases as fairly representing the mild forms of typhoid fever to which my paper has reference.

Case I.—A girl, nine years old, residing for the summer in Baltimore County, among the hills overlooking Lake Roland, one of the water storage lakes of the city, was taken sick July 22, 1884. The attack began with languor and headache, anorexia, and nausea. She had no chill, but remained languid and thoroughly uncomfortable. She was not confined to her bed until the 27th, when it became evident to her mother that she was unfit to be about. I saw her at midday of the 28th. Her temperature was then 100.6° F. At 9 P.M. it was 102.6° F. She was nauseated, and vomited several times. During the day she had several loose stools, and suffered intensely from headache. She was much debilitated. Some pain was referred to the epigastrium, but there was no belly-tenderness to pressure. The tongue was coated with thin white fur. The countenance was distressed. As soon as the nausea was overcome by appropriate measures, a milk diet was instituted, and fifteen grains of quinine sulphate in pills were given in three doses daily. Diarrhœa was controlled at once, and was not again present during her illness. The pulse, temperature, and, for a time, the respiration, were systematically observed, three temperature observations being taken daily (at 7 A.M., and at 3 and 9 P.M.) as shown in Chart I. Cinchonism was quickly induced, and maintained for several days, when the powerlessness of quinine to control the fever was demonstrated, and the dose was diminished to six grains daily. This was continued until convalescence was established, and was the only medication employed.

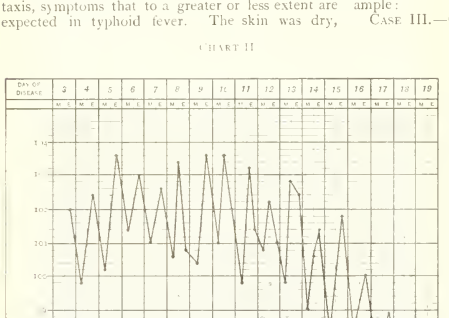
Chart I.


DAY OF DISEASE
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
M E M E M E

slight behavior throughout, the continued fever was the only prominent symptom. A most instructive feature of the case was the morning apyrexia, dating from the nineteenth day. This temperature variation at once suggests what writers have described as the transition of a remittent fever to an intermittent. With the hope of preventing this evening exacerbation, quinine was again pushed to pronounced cinchonism, but in vain. Morning apyrexia, however, is a common phenomenon of the latter period of typhoid fever, and a disregard of this fact is answerable for many of the so-called relapses of this disease, especially in private practice, where the medical attendant unwisely judges of the condition of his patient from a single morning daily visit.

Case II.—On August 6th the six-year old sister and room-mate of my first patient was observed to have fever. She had been somewhat listless for two days previously, and had been warm, and without appetite. The evening temperature on August 8th was 102 Fahr. Systematic observations were begun on the 9th. Chart II. shows the temperature observations, and bears out the remittent-like character of the attack as shown by the symptoms. Not to prolong unduly the history of this case, it will suffice to say that, although the fever was pronounced, there was at no time hebetude, delirium, diarrhœa, abdominal or iliac tenderness, roseola, tympanites, splenic enlargement, bronchitis or epistaxis, symptoms that to a greater or less extent are expected in typhoid fever. The skin was dry,

CHART II



the conjunctivæ somewhat injected, the tongue moist and slightly coated. The child was thirsty, and was always eager to drink its apportioned share of milk at the stated intervals. She slept well at night, and during the day was bright and playful, indeed, disposed to romp. Sulphate of quinine was given in daily doses of twelve grains, divided into three doses, until intense cinchonism was induced. This effect was kept up until the fifth day, when its powerlessness to control the fever having been demonstrated, the daily dose was reduced to six grains, and was continued until defervescence, which occurred on the seventeenth day. Upon the establishment of convalescence both children were considerably wasted.

No other member of the household was attacked. The sanitary condition of the house gave no explanation of the origin of the attacks. The drinking water was pumped from a spring remote from any contaminating influence. The ice-house, however, had been filled from a pond used as a power for pumping the spring water to the house; and this pond received not only the overflow-water of the cesspool of the house, but of that of one or two others on the neighboring hillsides. Upon discovering the source of the ice supply, its use was at once discontinued. During the previous season one or two cases of "slow fever" had occurred in the vicinity.

It would be difficult to regard my second case as other than one of remittent fever, were it not for its defiance of anti-malarial treatment and the concurrence of the first case, which was sufficiently distinctive of typhoid fever.

Typhoid fever in children, however, is more often atypical than not, the most characteristic symptoms often failing. The resemblance to remittent fever is almost as frequently observed in adults, in the milder forms. The following case affords an example:

Case III.—G., about twenty-three years old, a clerk, unmarried, tall and slender, leading an active life, spending the summer months in the country in a small house, near which there was an open ditch which retained water for several days after rain storms. In previous years he had had a number of attacks of malarial fever, which is occasionally observed in the neighborhood. On August 28th, after having felt unusually well for some time, he had a chill. Continuing to feel badly, he called to see me at my office on the succeeding day. He had headache, pain in the back, and general discomfort, but retained some appetite; his face was flushed, and his tongue coated; his bowels had been moved the day previous; there was no abdominal tenderness; his temperature at 3 o'clock P.M. was 102.6° Fahr. He was told to go to bed, which he did at the house of a relative in town, and took until ten o'clock the following morning forty-two grains of sulphate of quinine. Cinchonism was not very pronounced, however; a milk diet was instituted; the daily dose of quinine was fixed at twenty-four grains. The course of the disorder is shown in Chart III.

September 1. The bowels not having been moved since the 27th, two seidlitz powders were given, one in two hours after the other; a slight action was had toward morning; the tongue was coated with a thin,

whitish fur; during the night he vomited, and had slight epistaxis; there was some pain in the back;

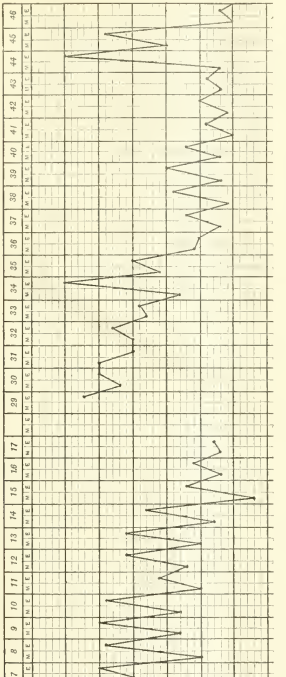


Chart III.

there were no rose-spots; no abdominal tenderness; the expression was bright and the mind active; there was no headache; the patient read in bed, and betrayed interest in his case and in current topics.

2d. Bowels moved twice during the night (from aperient). From this date the course was quite uniform. The tongue remained slightly coated, but moist; constipation was obstinate, and only relieved by saline purgatives; no roseola; no iliac tenderness nor gurgling were observed; the urine contained no albumen; hebetude or nervous symptoms did not develop; he slept well, and during the day was comfortable, reading diligently; his appetite was good, but only milk and beef-tea were allowed; there was, perhaps, some enlargement of the splenic area of dulness.

Complete defervescence took place on September 13th, or the seventeenth day of the fever. Convalescence seemed established. Without permission he spent the 21st at a relative's, but felt cold and miserable. On the 22d, of his own accord, he took ten grains of blue mass and two seidlitz powders, and the following morning a dose of Hunyadi water. This was followed by violent nausea and vomiting, but by a single stool. His temperature was now 103° F. He was ordered to take twenty-four grains of quinine daily. This was continued until October 2d, when the daily dose was reduced to twelve grains. On September 26th, his bowels not having been moved for several days, he took solution of the citrate of magnesia, two liquid stools resulting. Tongue coated with thin white fur. Belly not at all tense, but two roseola-like spots were detected. There was no belly-tenderness. The temperature slowly declined, and became normal on October 7th. With a slight interval of vesical tenesmus with a sudden rise of temperature, recovery was uninterrupted though tardy.

Ten days previous to G.'s illness, his younger brother, who had been living with him, had fallen sick, and had been attended in the country by Dr. R. W. Erickson, of Elkridge Landing, Howard County. He had a typical and severe attack of typhoid fever, and had a protracted convalescence. It proved impossible to ascertain the source of infection of these young men.

My note-books contain a number of similar cases, and my clinical experience has included a large number; indeed, not a year passes that they are not brought to my notice, both in my own practice and in that of medical acquaintances.

There are few diseases that are more distinctly marked by characteristic features than typhoid fever, and although one or more signs are absent in many cases of moderate severity, enough may be identified to make an easily recognizable picture. So inconstant are the separate typical symptoms, however, that Liebermeister has confessed that in typhoid fever we have not a single pathognomonic sign. While this inconstancy is generally recognized, there is not a general realization of the mildness with which the disorder very frequently pursues its course. "Walking typhoid," the *typhus ambulatorius* of the Germans, though usually considered a rare form, is in fact a very common one. The cases which declare themselves by the sudden development of alarming or fatal symptoms probably form but a small proportion of the whole number.

We have had to modify many of our views con-

cerning this disease. Though no less an authority than Wunderlich[1] declared that a disease in a child or adult under middle age, in which, between the fourth and sixth days, the evening temperature does not reach 40.5° C. (103.1 F.), is not typhoid, we now know that he is far from speaking correctly, even for severe forms of the disease. Strabe noted fourteen cases during the whole course of which a normal, at times a subnormal, temperature was observed. In these cases the accompanying symptoms established the diagnosis beyond a doubt.[2] Fräntzel, in more than one hundred cases of severe typhoid fever, treated in the field-hospital during the late Franco-Prussian war, observed forty-one cases in whom the temperature did not reach 39 C. 102.2 F.[3] In three of these it never attained 37.3 C. 99.14 F.[4] These were all severe cases. Strabe's mortality was 14.1 per cent., that of Fräntzel 39 per cent. for the forty-one cases.

In mild forms of the fever the frequent occurrence of but slightly elevated temperature is not at all uncommon, and is widely admitted. Liebermeister noted, at Basle, affections which ran their courses without fever, and yet could, with good reason, be referred to typhoid infection. Lommis, in linking the "mild type" of cases of typhoid fever with the "walking type," states that the eruption appears in them early, and is scanty and brief, and that diarrhœa is present in most cases. This description undoubtedly suits many of our cases in Baltimore as elsewhere, but there is a large class, certainly typhoid in character, in which constipation is the rule, and rose-spots are decidedly exceptional. Indeed, these two symptoms are much less constant in well-defined though mild typhoid fever than many of our writers would lead us to conclude. Liebermeister, in one hundred patients in whom the fever never exceeded 104° F., and in many 102.5° F., and in whom the course was markedly shortened, observed roseola in but twenty-one, diarrhœa in forty-one, while splenic enlargement was observed in seventy-one.[4] He has also reported from his hospital service many cases entered as febrile and afebrile abdominal catarrh, which he attributes to typhoid infection. A number of writers have made similar observations.

In two admirable papers, one entitled "On the Diagnosis of Mild Cases of Typhoid Fever," etc.,[5] the other "On the Mild Forms of Continued Fever," etc.,[6] Dr. W. W. Johnston, of Washington, has described these forms of typhoid fever with so much faithfulness and skill that I should hesitate to present my own views upon what may by many be considered as already demonstrated, were it not that many observers, in malarial districts especially, persist in regarding them examples of "typho-malarial" and "remittent malarial fever." Malaria often complicates typhoid fever, but it oftener happens that its presence is assumed unjustifiably. The mental bias is often so strongly pronounced in favor of malaria, that even the strongest evidence fails to prevail against it.

Remittent malarial fever is so simulated by the cases under discussion that the diagnosis must wait upon the crucial test of treatment. It is true, that all writers admit that occasionally antiperiodic remedies, generally efficient, fail to control the malarial paroxysm. This occurs especially in many cases of pernicious fever, and in certain adynamic remittents where profound systemic disturbance is apparent; but in the milder forms of remittent fever that correspond to the milder form of typhoid fever, the behavior of the individual under quinine practically settles the question. If the full influence of the anti-periodic has been exerted for four or five days, or a week, without the desired result, the diagnosis of typhoid fever becomes justifiable, and the prognosis may be made with a high degree of confidence.

Not often earlier than the end of the second or later than the fourth or fifth week the fever will terminate by gradual lysis, rarely by crisis. This will be the almost constant result. I have never seen a patient die in whom the disease took the course indicated, and who was submitted to proper control. There are exceptions to the rule, however. Dr. Johnston has given a most interesting history of a case of very mild typhoid fever, of the atypical character to which I refer, suddenly developing fatal complications.

The occasional occurrence of death in cases of "walking typhoid" also shows that even the mildest cases are not without danger. These cases, however, have the disadvantage that they often elude observation and incur too often the dangers of complications from a persistence of those influences that tend to precipitate them. Yet, unquestionably, very many of the cases of "walking typhoid" never develop alarming symptoms, and are never recognized, the patient probably never interrupting his daily work. Doubtless many, in mild degree, display, upon examination, the more characteristic signs of typhoid fever, diarrhœa, rose-spots, enlarged spleen, etc., but it is quite certain that in not a small number these signs fail to be discovered. They are also absent in a large proportion of those cases of typhoid fever which have been the subject of this paper, and, in consequence of their absence, the true nature of the disease is often unrecognized, and the pathological responsibility thrown upon "febricula," "simple continued fever," "gastric fever," "bilious remittent fever," "remittent malarial fever," etc. From beginning to end they lack the most characteristic symptoms of typhoid fever, and should be diagnosticated from the persistence of fever, its defiance of specific treatment, and the occasional demonstration of their dependence upon the typhoid principle.

For the future it is quite safe to predict that a solution of diagostic difficulties will be attained often through the rapidly increasing knowledge derived from bacteriological research and culture observations.

[1] Medical Thermometry. The Sydenham Soc. Trans., 1871, p. 293.
[2] Berlin. klin. Wochenschr., 1871, No. 30.
[3] Zeitschr. f. klin. Med., 1881, p. 220.
[4] Ziemssen's Cyclop., vol. i. p. 12.
[5] Amer. Journ. Med. Sci. Oct. 1875.
[6] Ibid., Oct. 1882.

FLOATING SPLEEN: SPLENECTOMY; RECOVERY.[1]

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So scant and unsatisfactory is the literature bearing upon splenectomy that we trust the following detailed history may not be devoid of interest.

Mrs. C. A. G., aged twenty-nine, born in America, housewife, was admitted to the hospital May 6, 1886. She stated that she had suffered during the past six years from an abdominal tumor, associated at irregular intervals, with severe hemorrhages.

Her family history was good, there being no hereditary dyscrasia; her parents aged about seventy-one years; brothers and sisters are all living, except one sister, who died of some "obscure nervous affection."

Previous to the present trouble, the patient enjoyed perfect health; though living in a malarious district, she never had ague; has menstruated since thirteen years of age, and was always regular till one year ago when, after an attack of hematemesis, her "periods ceased for a few months," nor had she menstruated since March, 1886, the time of the last hemorrhage. She has been married seven years; has no children, but had three abortions in 1880, '82, and '85, at the fifth, eighth, and second month respectively.

Each of the mishaps was apparently causeless, and without warning, except the last, which may have been induced by large doses of ergot administered for the relief of hemorrhage. But, be this as it may, after the first abortion she suffered more or less constantly with vertigo and general nervousness; the tumor, though probably having existed for a long time, was not noticed until the morning following the second miscarriage, in 1882, and the first attack of vomiting of blood occurred two months previously, and was followed after the lapse of ten days by another; a third occurred about six months later, a fourth in July, 1883; a fifth in September, 1884; a sixth in July, 1885; a seventh in December, 1885, and an eighth in March, 1886.

The blood was always vomited except in one instance, when part passed by the mouth, and part per rectum; on another occasion the greater portion escaped by the latter course. The attacks were marked by suddenness of onset, and most alarming severity, the only premonitory symptom being a day or two of drowsiness and general malaise; then, the patient usually waking from sleep, more quiet and profound than had been her custom in health, would complain of salty taste and intense nausea. Scarcely would she experience these sensations, until the blood came gushing from mouth and nostrils, never ceasing till syncope, nature's hemostatic, would check the flow, and leave the victim all but exhausted.

The period following such an ordeal was generally characterized by good health; appetite, lost weight and strength were soon regained, but only preparatory to another siege. The intervals became shorter, and each hemorrhage more severe than the preceding, until with the last, the unfortunate woman lay pulseless, and apparently dying.

She then entered the hospital—a perfect picture of anæmia; her skin was pale and waxy; lips and conjunctivæ almost colorless, body emaciated; hands and feet cold; respiration shallow; temperature subnormal; pulse rapid, feeble, and compressible. She was restless, and complained of alternate flushes of heat and shivering sensations, of drowsiness, vertigo, tinnitus aurium, and dimness of vision. Physical examination of the abdomen revealed a tumor occupying the left iliac, and extending to the suprapubic region. Its surface was flat and smooth, contour well-defined, of oblong or roundish shape; dimensions four by five inches; consistency more than semi-solid; percussion note dull, and the auscultatory signs were negative. It was extremely mobile, though preferring the left iliac region, the mass could be shifted, either by change in the position of the patient's body, or by the surgeon's hand, into any part of the abdominal cavity, even above the umbilicus.

The patient stated that, for a short time after its appearance, the swelling increased rapidly in size, but that within a year or more its condition had been in this respect stationary, except just before a hemorrhage, when it would become considerably enlarged; that it would pulsate violently during an attack, at the same time diminishing in size, but during the interval its former dimensions were soon regained, there being then absolutely no evidence of pulsation. Another conspicuous feature of the case was the absence of pain throughout the history of her illness, with the exception of such discomfort as might be referred to chronic constipation and occasional attacks of vesical tenesmus.

Vaginal examination showed that the tumor extended deeply into the cavity of the pelvis, occupying especially its left half, from which position it could be readily dislodged by the index finger, after the manner of ballottement. The uterus was of normal size, but slightly displaced to the right side. The sound, as well as conjoined manipulation, proved that either the uterus or the tumor was movable, the one without the other. There was no evidence of kidney, liver, or other glandular disease; the lungs and the heart were also normal, though in case of the latter, a well-marked hæmic murmur could be heard at the base. Percussion over the splenic area, from the ninth to the eleventh rib under the axilla, elicited abnormal resonance.

After careful consultation, surgical interference was deemed the only means of relieving the patient of further suffering; but such was the state of debility that this step would not have been justifiable without previous improvement in her general health. She was, therefore, placed upon tonic doses of quinia, with tinct. ferri chloridi, and acidum phosphoricum dilutum, and after three weeks had gained sufficient strength to warrant the removal of the tumor. Accordingly, a brisk cathartic was ordered

[1] Read at the meeting of the American Surgical Association, Washington, D. C., 1887.

on the night preceding the operation, and on May 27, 1886, the bowels being further relieved by a copious enema of soap and water—the patient having fasted, received the anæsthetic (pure ether), and laparotomy was performed by an incision five inches long, and in the median line, its upper extremity terminating one inch below the umbilicus. The lips of the wound were then held aside by means of retractors, and the upper part of the tumor brought plainly into view: the lower half dipped deeply into the pelvic cavity, and was concealed by a broad and vascular fold of omentum; on lifting the mass (now recognized to be the spleen), another portion of omentum, traversed by more than a dozen very large and tortuous veins, was found to have become firmly and extensively adherent to its posterior and external surface.

Though manipulated with the most delicate care, these adhesions gave way, necessitating the application of clamp forceps to arrest hemorrhage. The capsule of the spleen also yielded, tearing rather widely at a point close to the hilum: a very profuse gush of blood followed, but was promptly controlled by an assistant who made pressure by grasping the ruptured portion in his hand.

The pedicle, consisting of the splenic vessels, etc., was then transfixed and secured by a double carbolized silk ligature, another ligature being applied as an additional safeguard against secondary hemorrhage. After the vessels of the omentum had been treated likewise, all the ligatures being cut short and dropped into the cavity of the abdomen, the latter was thoroughly cleansed, and the splenectomy completed (1.15 P.M.) by closing the wound with deep, interrupted silver sutures, including the peritoneum.

The operation was done under Listerian precautions, under the carbolic spray; the line of incision dressed with dry iodoform, protected with antiseptic gauze, secured by adhesive plaster, and all covered by a heavy layer of absorbent cotton, held in place by an abdominal (flannel) bandage. Not more than two ounces of blood were lost, and yet the patient suffered the most profound shock, requiring, both during and after the operation, the free administration of whiskey and ether, hypodermatically, to stimulate and sustain her extremely feeble circulation, but she soon reacted, and at 6 P.M. had a pulse of 100, a temperature of 99.5°, and normal respiration. She stated that she felt comfortable, though weak and stupid.

For a short time she appeared to lose flesh, and to become more anæmic; there was slight increase in the number of white blood corpuscles, but no perceptible enlargement of the liver, thyroid, or lymphatic glands as formerly observed in similar conditions by Zesas, Tauber, and others. Under the carefully directed after-treatment, which was principally dietetic—consisting of milk, beef-tea, rice, eggs, etc., at short but regular intervals—she soon began to improve. On the second day after the operation a large quantity of gas escaped from the stomach and intestines, and, on June 1st, her bowels moved freely. The wound was also examined: its edges had already firmly united, and there was no evidence of suppuration. The stitches, eight in number, were then removed, and fresh dressings applied.

The case progressed favorably, her pulse ranging from 88 to 100, and her temperature never rising above 100⅘° until the eleventh day, when catheterization became painful, the patient complaining also of slight tenderness on pressure in the left iliac region. This marked the onset of a somewhat alarming and rather obstinate attack of phlegmasia alba dolens. During the ensuing week the intensity of the symptoms increased, the tenderness and œdema spreading to the left loin, vulva, buttocks, and lower extremity, along the entire course of the left femoral and internal saphenous veins to the left foot. She suffered, also, from profuse watery diarrhœa and loss of sleep, there being at the same time marked increase in the febrile excitement. But this complication slowly yielded to an anodyne, astringent and tonic plan of treatment, so that by June 18th her pulse and temperature were normal, and the patient was free from all distress. She was discharged from the hospital June 29, 1886—thirty-three days after the operation. Her health continued to improve; she menstruated in September and in October, 1886, but soon after that occurrence became *enciente*, and is now in the eighth month of her pregnancy.[1]

The symptoms and complications attending this woman's condition are now readily explained. The hemorrhages were probably due to certain pathological changes in the vessel-walls, induced by the damming back of blood from the misplaced spleen into the other abdominal viscera—bleeding occurring whenever the intravascular pressure would become sufficiently great to rupture the vessels. The intimate connection of the splenic circulation with that of the stomach and intestines, as well as the functional activity of the latter, are sufficient to explain the seat of the accident.

The abortions were caused by the irregular blood supply; the general hemorrhagic tendency, the malposition and reflex irritation of the pregnant womb.

The constipation, the displacement of the uterus and the vesical tenesmus were due, in great measure, to pressure exerted by the tumor. The spleen was "floating," probably, from some congenital defect in its attachment, there having been no history of effusion into the thoracic cavity, of corset-constriction, nor of other injury to the chest-wall.

The fact that phlebitis followed the operation may be accounted for by the hyperinotic state of the blood—a condition common to all such cases—and favoring coagulation at some convenient point in the course of the circulation. In this instance, the point of least resistance seems to have been the common iliac vein—the left rather than the right, because it is more tortuous and joins the vena cava at a more oblique angle than does its fellow of the opposite side. Again, the walls of this vessel, not only diseased, but also impaired by the combined pressure of the spleen and the rectum, were

[1] Since the above writing, the patient was confined at term, but the child was born dead.

further damaged by removal of the support afforded by the tumor.

The profuse diarrhœa must have resulted from the congestion of the intestine, which was increased by the removal of the spleen, together with that peculiar state of the vascular tunics and of the blood, which favors the escape of its serum.

As to the pathology of the splenic tumor, there was nothing especially interesting, except that this was not an instance of *supplementary* spleen, such as have been not infrequently observed post-mortem. It weighed, after the escape of a considerable quantity of blood, fourteen ounces; was of little more than normal density; its dimensions, five by five and a

Recorded Cases of Splenectomy.

The operation in all these cases was by incision of the abdomen in the median line.

No.	Operator.	Date.	Age.	Sex.	Disease.	Result.	Remarks.	Reference
1	Franzolini,	July, 1881.	22	F.	Hypertrophy of spleen; leukæmia.	Recovered	Sickly since childhood; tumor recognized in 1880; weighed 61 ounces; measured 9½ by 10½ inches; convalescence delayed by pleuritis.	Wiener medicin. Wochenschrift, 1882.
2	Credé, Jr.	1882.	44	M.	Hypertrophy of spleen following injury; cystic degeneration.	Recovered	Attempted to remove cyst, but was compelled to remove entire organ.	11th Ger. Surgical Cong., Cntrbl. für Chir., 1882, No. 29.
3	Rydygier,	March, 1884.	30	F.	Splenic tumor; leukæmia.	Died.	Died 24 hours after the operation from hemorrhage from abdominal wound.	Lancet, 1884.
4	Billroth,	March, 1884.	...	F.	Sarcoma of spleen.	Recovered	.....	13th Congress Ger. Surgical Society.
5	Thornton,	April, 1884.	19	F.	Hypertrophy; commencing cystic degeneration: increasing and painful	Recovered	Tumor had been recognized for two years.	Brit. Med. Journ., April, 1886.
6	Terriér,	June, 1884.	y'ng	girl,	Hypertrophy; leucocythæmia.	Died.	Died 20 hours after the operation from capillary hemorrhage into peritoneal cavity; spleen weighed 13 pounds.	Med. Record, Aug. 9, 1884.
7	Giovani,	October, 1884.	43	F.	Chronic hypertrophy; pernicious anæmia.	Recovered	Reported doing well 72 hours after the operation.	
8	Köberlé,	1884.	...	F.	Hypertrophy, consecutive to intermittent fever.	Died.	Died 20 hours after operation, supposed from intracranial hemorrhage. Great loss of blood during operation. Spleen 16 inches in diameter; weighed 1 pound; liver enlarged; abundant serous exudation; œdema of extremities.	Journ. d'Accouchements, May, 1884.
9	Younker,	1884.	32	F.	Dislocation of spleen.	Recovered	Spleen three or four times larger than normal.	Amer. Med. Journ., July, 1884.
10	Roddick,	Nov. 1885.	...	M.	Rupture of spleen: wound of abdomen; laceration of kidney.	Died.	Died six hours after the operation.	Montreal Medico-Chirurg. Society.
11	Albert,	1885.	34	F.	Tumor in left hypochondrium; painful on standing or walking; great increase in white blood-corpuscles.	Recovered	Adhesion to tail of pancreas and omentum. Wound healed in four weeks. Great increase in red blood-corpuscles after operation.	Cntrbl. für Chir., 1885, No. 24.
12	Thornton,	April, 1886.	...	F.	Hypertrophy of spleen.	Died.	Death from internal hemorrhage.	Brit. Med. Journ., April, 1886.
13	Polk,	May 19, 1886.	...	F.	Dislocation of spleen.	Recovered	Spleen adherent to uterus and bladder. Patient now in excellent health.	Communicated by operator.
14	Ceci,	May 23, 1886.	17	F.	Hypertrophy (congenital) of spleen.	Recovered	Tumor very movable, floating from hypochondrium to front of abdomen. Violent delirium followed the operation for two days. Great prostration; pulse could not be counted; respiration 70 to 80.	Gazetta degli Ospitali.
15	McCann,	May 27, 1886.	29	F.	Wandering spleen; violent attacks of hæmatemesis; great anæmia.	Recovered	Extensively adherent to omentum. Convalescence complicated and retarded by phlegmasia alba dolens.	Medical News, Aug. 1887.
16	Meyers,	October, 1886.	...	F.	Suppurating spleen in peritoneal abscess; two sinuses leading into abscess.	Recovered	....	Journal of the American Medical Association, April, 1887.
17	Podrez,	.....	...	F.	Hypertrophy of spleen, with ascites and extreme cachexia.	Recovered	Recovered from effects of the operation, but died December 27, 1886, from diffuse parenchymatous nephritis.	Lancet, Feb. 1887.

half inches; border slightly rounded; was very vascular, friable on section, but paler than usual, its color and consistence resembling, on the whole, a greatly enlarged kidney. Microscopic examination detected nothing abnormal, save slight thickening of the trabecular and intercellular connective tissue.

The patient's blood contained more white corpuscles than normal, but not enough to constitute leucocythæmia.

With regard to the functional effects of removal of the spleen, we are disposed to confirm the opinion of Crede, who observes (*Medical Record*, July 29, 1882): First, that the spleen can be extirpated without injury to health, except a *temporary* anæmia. Second, that its extirpation produces a marked temporary anæmia, with increase of white corpuscles, as well as decrease of red.

Tauber further states (*Journal American Med. Association*, July 12, 1884): First, that the spleen is one of the main reservoirs of the blood, whose influence on the circulation is seen—after its removal—in the congestion of the liver, kidneys, and especially lymphatic glands (not perceptible in the case now under consideration, though probably present). Second, that no physiological affinity exists between the thyroid and the spleen. Third, that the removal of the spleen does not impair the digestive functions or nutrition.

In addition to these facts, we observe that conception and parturition are possible after splenectomy; also, that the spleen, alone, is not the "cradle and the grave of the red blood-corpuscle."

At the present writing, more than a year after the operation, the woman's health is good, and she is able to perform without discomfort all the duties incumbent upon a farmer's wife, the only remaining trouble being slight swelling and weakness of the left lower extremity.

In conclusion, we append a review of the history of excision of the spleen, also certain interesting statistics compiled by Prof. James McCann.

Splenectomy, for all causes, has now been performed fifty-one times, with a mortality of 62.8 per cent. In addition to these *complete* excisions, the table given by Otis (*Med. and Surg. History of the War*, Part 2, vol. ii. pp. 152–153) shows *partial* excision to have been performed in twelve cases, for various injuries of the organ. All these cases recovered.

By reference to this table, and to that of Mr. Herbert Collier (*Lancet*, February 11, 1882), it will be seen that the operation of *complete* excision of the spleen for injury, as well as for dislocated or "wandering" spleen, and for hypertrophy uncomplicated with leukæmia, afforded a very gratifying degree of success—thirteen operations with eight recoveries. On the other hand, the same tables show a ghastly record for the cases in which the operation was performed for hypertrophy of the spleen associated with leukæmia—sixteen cases in all, without a single recovery.

The results obtained since Mr. Collier's publication show a steady and very gratifying improvement in the percentage of recoveries. The table appended to this paper includes all the cases operated upon since 1881, so far as I have been able to find any record—seventeen complete excisions, with twelve recoveries. Included among the successful cases are two, those of Franzolini and Alesio Giovanni, in which the splenic disease was probably complicated by leukæmia. It is possible, however, that not all of the fatal cases have been reported. Thus, Tait refers (*Ovarian Diseases*, etc.) to two instances within his knowledge in which hypertrophied spleen was mistaken for ovarian tumor, and the operation for the removal of these supposed cysts terminated fatally in both cases, no report of the mistake ever being published. The chief source of danger in the operation consists in the marked tendency to hemorrhage—a tendency unfortunately present in all cases of splenic disease—and the mortality, in a large majority of the fatal cases, has been due either to uncontrollable bleeding during the operation—as in one of Bryant's cases, death having occurred in fifteen minutes from the loss of blood; or to secondary hemorrhage at the seat of ligature, or to capillary oozing from the highly congested abdominal viscera—as in Terrier's patient, where death followed from capillary hemorrhage into the peritoneal cavity, twenty hours after the operation.

In the discussion which followed the report of Crede's case to the German Surgical Society (*Centralblatt f. Chir.*, 1882, No. 29) six other cases were mentioned by different operators, with but one recovery. However this may be, the success attending the recent excisions is so very encouraging that we may hope that even in cases of hypertrophy complicated by leukæmia, splenectomy will not always merit the condemnation which it receives at present, and not always be regarded as "physiologically unsound and surgically unsafe," as Mr. Bryant characterizes it, nor as the "useless and deadly experiment" which Mr. Collier considers it to be.

COLOR BLINDNESS AMONG RAILROAD EMPLOYÉS.

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THE conflict between the officers and the employés of the Reading Railroad, which has occupied recently the attention of the public, and has threatened to produce a suspension of work on that road, has reopened the question of color blindness among railroad employés, and led to a full demonstration of its existence among the employés engaged even as enginemen, where the defect might lead to serious accidents, with loss of property and life. The officers of the road have selected the system for examination suggested by the writer, and employed to a full success for more than five years past on the Pennsylvania Railroad, and have appointed me to supervise its details, and, as ophthalmological expert, to decide all doubtful cases after careful examination of those found defective by the non-professional examiners of the company.

The conflict is nearly over, since demonstrations of the optical defect in engineers, made before a committee appointed by the employés have satisfied them

of the propriety of the testing, and the safety of the travelling public demands the removal of all color-blind persons from positions where their optical defect might be the cause of distressing accidents. In the recent demonstration I was able at my office to show that an engineman declared a red danger signal, made by placing red glass in front of a large gas light at a distance of two feet away, to be a green light; he was also not only unable to distinguish a red from a green flag within six feet, but he failed to classify the flags, white, red, green, and blue, properly, even when allowed to take them in his own hands.

The system adopted by the Reading Railroad is the one in use on the Pennsylvania Railroad, and owes its value to the fact that large bodies of employés can be brought under inspection, and their defects discovered by non-professional examiners. It has been fully described in The Medical News of January 14, 1882, in the second edition of Nettleship's work on *Diseases of the Eye*, and in a paper read before the American Association for Advancement of Science, in September, 1884, and in the *Popular Science Monthly* for February, 1885, and to those sources the reader is referred for further information.

Previous to its adoption by the officers and directors of the Pennsylvania Railroad two thousand men were examined, and their blanks submitted to me, and the color-blind men sent to my office for final action. Mr. Pugh, General Manager, stated in September, 1884, that there were thus detected four per cent. of men color blind, and ten per cent. of men deficient in acuteness of vision, and that, although it was very difficult to keep accurate notes of all examinations, he was satisfied that all dangerous persons had been removed up to that date, when over twelve thousand employés had been submitted to the system.

The statistics obtained upon the two thousand men were used as the standard by all the Division Superintendents, and however difficult it might be to report to the central office the full details of their examinations, they were always controlled by these known and accepted ratios. It has not been found requisite to send all men deficient to the ophthalmological expert, since they did not demand it, but submitted to the changes rendered necessary without opposition, hence I am unable to furnish exact reports of the examinations made at remote portions of the road. Most of the color-blind men have passed under my hands, as well as many cases of astigmatism, optical defects, and diseases or injuries reducing the sight below the standard, and the results may some time be found worthy of publication.

An opportunity to present the last opinions of the officers of the Pennsylvania Railroad has been afforded by a request which was made by the German Government, through its Minister, to the Surgeon-General of the United States Army for statistical and other information on the subject, and this letter, referred to me by the Surgeon General, has been answered by Mr. Pugh, who has kindly made efforts to obtain the figures from the great organization of which he is General Manager. He writes, under date of July 7, 1887, and says:

"I regret that so long a time has elapsed since the receipt of yours of May 25th and this reply. The delay has been occasioned by our efforts to obtain some statistical information, which I regret to find has not been kept up as closely as was intended. I enclose herewith statements showing the number of employés examined during the past five years, with the results stated.

"I can only add that we have attained the most satisfactory results from the system, and I think we can confidently claim that sense of security which follows the belief that we have no one employed in any position in which the use of signals is required, whose color-sense and sense of vision will not enable him to accurately determine all signals by which his action is governed."

Total number examined on lines east of Erie	25,158
Color blind	481
Defective vision	661
Hearing	158

I am informed that the system has been found so satisfactory that it has been extended to the lines west of Pittsburg, and no doubt is now in use throughout all the lines controlled by the Pennsylvania Railroad.

It will be remembered that this system is also used to prevent the admission of defective men into the service, and that the apparently small percentage of color blind in this table may be ascribed to the non-application of men who know their deficiency, and to the fact that men in the service knowing their defect would leave the road before examination, and thus escape detection, and be enabled to gain employment on other roads, where no examinations are required. Perhaps twelve or thirteen thousand was the number who were subject to examination by virtue of being in positions where color signals were used to direct them, in 1884, and the difference between that number and the total 25,000, would be made up of new men who would present a small ratio of those below the standard, since men conscious of color blindness, or poor sight, would not apply.

The fact that the intelligent officers of the Pennsylvania Railroad have adopted this system, purged their old force of all dangerous men, extended its use to all parts of their immense railroad, and now oppose it as a barrier to the admission of men thus unfit for service, is the best evidence that can be adduced to claim for it a successful place among the efforts to render scientific truths of practical value to the world. It is hoped that the Reading Railroad will be sustained in its contest with its employés by the example so quietly conducted by the Pennsylvania, and that the reform so necessary for the travelling public and for those employés who carry their lives in their hands daily, may be conducted to a happy finish.

MEDICAL PROGRESS.

Sunstroke and its Prevention.—The *Lancet* of July 30, 1887, gives the following advice, which is most opportune in the present heated term:

Several cases of sunstroke have recently been re-

ported from the west of England, and intelligence from America shows that deaths from this cause have also been remarkably frequent there. A few observations on this subject should, therefore, be not unseasonable at the present time. To speak of sunstroke as being due to more causes than one may sound at first sight rather like a contradiction in terms, but there can be no doubt that besides the principal influence at work in such cases there are others of real though secondary significance. In seeking to explain the causation of this morbid state we must, indeed, regard at least two different conditions as commonly acting together to produce the result. One of these is external heat, not necessarily that of the direct solar rays; the other is the presence in excess of impurities in the blood circulation, with a want of due nutrition in the tissues which it supplies. The consequence of this abnormal state of body is necessarily to delay the blood current, and the state of congestion thus engendered in the nerve centres of the brain and cord renders the latter unusually irritable to the action of external stimuli, of which external heat is, for the case we are discussing, the most important. It follows accordingly that prevention must include some care as to modes of living, as well as means of regulating or resisting heat from without the body. For example, the free use of alcoholic stimulants, which tends to impair nutrition, is no longer considered to be advisable; while tea and coffee, which check the formation of waste products, are proportionately valuable. Tight clothing about the chest is generally condemned as being likely to impede the aëration of blood in the lungs, and experience has proved that for a similar reason the imperfect ventilation of workrooms in warm summer weather is conducive to heatstroke. As regards protection against the sun's rays, it should be remembered that not only the head but the back of the neck must be suitably guarded in order to insure the traveller against the risk of injury. The wearing a damp handkerchief, or a leaf, such as that of the cabbage, next the head has also been found very useful. One word as to the immediate treatment of a case of sunstroke. In some instances, doubtless, not even the readiest assistance will save life, but in a case of need it is well that all should bear in mind that the most effectual form in which first aid can be rendered is the application of cold—as cold water, ice, etc.—to the head and neck.

FORMULÆ FOR ACID CALCIUM PHOSPHATE SOLUTIONS FOR THE TREATMENT OF TUBERCULOSIS.—FREUND, of Vienna, publishes the following, as used by KOLISCHER (THE MEDICAL NEWS of June 25, 1887, p. 710). For hypodermatic injections:

Calci. phosphorici neutral. . .	5 parts.
Aquæ destill.	50 parts.

Add phosphoric acid until a perfect solution results; filter; add

Acid. phosphor. dil. . . .	$\frac{1}{10}$ part.
Aq. destillat. . . .	q. s. ad 100 parts.

For an escharotic effect upon tuberculous ulcers and indolent granulations, the following is used:

Calci. phosphorici neutral. . .	50 parts.
Aq. destillat.	500 parts.

Add phosphoric acid until a perfect solution is obtained; filter; add

Acid. phosphor. dil. . . .	60 parts.
Aq. destillat. . . .	q. s. ad 1000 parts.

Gauze may be soaked in this fluid, and used in dressing tuberculous fistulæ and pockets.—*Wiener medizinische Presse*, No. 24, 1887.

COCAINE IN HAY FEVER.—DR. BISHOPS, of Chicago, in the First Prize Essay of the United States Hay Fever Association for 1887, writes as follows on this subject:

Cocaine, in a four or ten per cent. solution, applied with a camels' hair brush, gives speedy relief. The patient should never omit clearing the membrane of mucus before applying any local remedy, else the medicine is diluted and prevented from acting on the seat of irritation. Better than the solution is a six or ten per cent. powder of cocaine and sugar of milk, applied to the nasal cavity with a pocket insufflator or powder-blower, small enough to carry in the vest pocket and to be used unnoticed the instant an attack threatens. The vulcanite tip of the soft rubber tube should be applied to the lips, when a gentle puff of the breath will blow a cloud of the anæsthetic powder into the nasal cavity, when the hard rubber tube is properly directed. This instrument is constructed after my large office insufflator, which is operated by a rubber bulb containing soft-rubber valves. The effects of cocaine may last several hours, but repeated applications may be necessary to keep up continuous insensibility of the membrane during prolonged attacks. However, it should be known that some persons possess an idiosyncrasy which forbids the use of cocaine. The primary action may produce anæsthesia and anæmia of the membrane, regularly, but the bloodvessels may become dilated and remain so, instead of returning to their normal calibre as they do in most cases. This condition of secondary hyperæmia is attended with intense hyperæsthesia and all the symptoms of severe hay-fever. Fortunately there seem to be few who are so distressed by this remedy, and I have employed it in many cases of various diseases without observing any disagreeable symptoms.—*Journal American Med. Association*, July 23, 1887.

THE TREATMENT OF DIARRHŒA BY CANNABIS INDICA.—DRS. BOND AND EDWARDS give the following prescription in the *Practitioner* for July, 1887, which they have found very useful:

℞.—Tincturæ cannabis indicæ .	♏x.
Liquoris morphinæ . .	♏v vel ♏x.
Spiritus ammoniæ aromatici	♏xx.
Spiritus chloroformi . .	♏xx.
Aquam	ad ℥j.

To be repeated every one, two, or three hours, according to circumstances. Directions: *No food for several hours, but a little brandy and water.* We have not seen one case run on to a fatal issue under this treatment.

THE DANGERS OF HYPNOTISM.—LARROQUE expressed the following views before the Paris Medico-Psychological Society at a recent meeting: In Paris, as in other places, hysterical patients are put asleep and

suggestions made to them, but many times without effect, and sometimes unfortunate results have occurred. I cite amongst others, the case of a young girl subject to slight vomiting. The doctor, knowing that he had to do with an hysterical patient, made use of hypnotism, in which he was well versed. On awakening, the girl had a contracture of the foot, which remained for some months. Neither putting her to sleep nor suggestions could make this contracture disappear. Afterward it was followed by difficulty in walking, by atrophy of certain muscles, by the retraction of the tendo Achilles, and perhaps by an adhesion of the joints. This contracture ought not to surprise us when we think of the neuro-muscular hyperexcitability in certain phases of hypnotic sleep, especially in the lethargic state, when the lightest touch or breath may produce a contracture which ought to be instantly undone. Here we have a young girl the victim of hypnotism; such cases are numerous.

It does not stop there. It is averred that, in causing hysterical patients to sleep, their mental derangement is confirmed. By hypnotism we can bring on mental disturbance of which the last term is that of hysterical insanity. Moreover, if these patients are often put to sleep, they can in the end fall asleep of themselves; consequently these intellectual troubles can only be accentuated. These grievous phenomena may appear, not only after repeated experiments, but even after one trial. For example, let us take the case communicated to me by Dr. Deligny. A young girl after the first hypnotic séance remained during three weeks in a state of complete stupor. I have said enough to prove the dangers of these experiments, which are not always attempted for a praiseworthy aim.—*Annales Medico-Psychologiques*, May, 1887.

Corrosive Sublimate in the Treatment of Diphtheria.—Stumpf has used the following prescription with excellent results:

℞.—Sublimat. . . . . gr. 3.
Aq. destil. . . . . ʒ 5¼.
Aq. menth . . . . . ʒ 1.

The cavity of the throat was sprayed with this every three hours.

Thirty-one cases were so treated, with but one death. No ill effects were observed from the treatment except-ing salivation, which was not severe, and persisted only three or four days.

The temperature fell under the treatment.

As to the amount of fluid which could be safely used, one drachm of the fluid is enough for one application. When a solution of 1 to 2000 was used, fifty inhalations would give a maximum dose, of one and a half grains of sublimate, for an adult.

In children older than six years, 1 to 1000 solution was used; for children between two and six years, 1 to 2000; in children under two years of age, 1 to 4000 or 1 to 3000.

Inhalations with a hand-spray are best given for the first five times, hourly; then for five times every two hours; then every three hours until the symptoms are mitigated.—*Therapeutische Monatshefte*, April, 1887.

Coca Cigarettes.—Dr. Nachtigall confers on the excellent properties of coca, especially of the wine, in alleviating hunger, stimulating the system, etc., which properties manifest themselves especially when taken while on a long march or while enduring other hardships. Later on, he recommends an entirely new preparation of coca—the cigarettes. In his discourse he says that, first of all, the very agreeable and mild taste and odor of coca, which admirably adapts it to this preparation, deserve mention. After he himself and some of his acquaintances tried them, he gave them to asthmatics; then he used them for catarrhal affections of the respiratory organs, and also for megrim of the nervous form. He is of the opinion that the good practical results which he invariably obtained were due to the anæsthetic action of the coca smoke upon the nerves of the relative mucous membrane. No disagreeable after-effects were noticed, so that persons who are susceptible to the action of nicotin in ordinary tobacco can smoke them with impunity. The doctor is convinced that these cigarettes will soon supplant those made of belladonna, hyoscyamus, stramonium, etc., and strongly urges a trial of them.—*Pharmaceutical Record*, June 15, 1887.

The Treatment of Chronic Eczema of the Vulva in Children.—Apply three times daily a two per cent. solution of carbolic acid to the affected parts.

Once each week touch the diseased surfaces with ordinary acetic acid.

If ulceration occurs and becomes of some depth apply a dressing of

Iodoform (finely powdered) . . 1 part.
Alum . . . . . 2 parts.
—*Journal de Médecine*, June 26, 1887.

Painless Evisceration of the Eyeball.—Dr. Mules, of Manchester, describes the following simple procedure in the *British Medical Journal* of June 4, 1887:

The pain is due to a rapid pouring out of serum into the subscleral space, with subsequent infiltration and tension of the orbit; it is a pressure, not an inflammatory pain. To avoid this, after completing all the steps of the operation as hitherto conducted, cut the external canthus, burrow freely back into the orbit with a pair of sharp scissors to the back of the sclera, taking special care to open the subscleral space; introduce an antiseptic-ised horse-hair drain, the cut ends just passing through the cut canthus; apply a dry, thin, absorbent pad, and an ice-bag over all.

Opium and Bismuth for Diarrhœa:

℞.—Bismuth. subnit. . . . . ʒ 2½.
Opii (crude) . . . . . gr. 3.
Essent. anisi . . . . . gtt. 2.
Div. in chart. 10 in number.
Sig.—One or two powders daily, before meals.
—*Journal de Médecine*, June 26, 1887.

A Neutral Hydrochlorate of Quinine.—Clermont has obtained this useful salt by combining the neutral sulphate of quinine in solution with a solution of barium chloride, and filtering to remove barium sulphate formed. The liquid thus obtained, when evaporated at 100°, furnishes the neutral hydrochlorate; a salt which

is easily dissolved in its weight of water at ordinary temperature, and not being caustic, is well fitted for hypodermatic use. At a temperature lower than 5° C. the solution deposits crystals which dissolve at 15° C.—*Bulletin Général de Thérapeutique*, June 15, 1887.

CHOLERA CONTAGION CONVEYED BY MILK.—DR. SIMPSON, Health Officer at Calcutta, reports the following case in the *Indian Medical Gazette* for May, 1887, which we abstract as follows:

The following outbreak of cholera on board the ship "Ardenclutha," is interesting as showing how localized outbreaks in widely scattered parts of a town may break out simultaneously, and, though seeming to have no connection, may have a common origin which is neither due to any climatic condition, nor to a peculiar epidemic state of the atmosphere, but to taking into the system a something which has been polluted by cholera excreta.

Hearing from Dr. Birch that several cases of cholera had been admitted into the General Hospital of Calcutta from one of the ships moored in the river, it occurred to me that a good opportunity presented itself of investigating the cause of the outbreak. On visiting the ship we found that not only had there been five cases of cholera, but we were informed that a number of the crew had been suffering from diarrhœa, and the general impression was that the outbreak was due to entrance into the cholera zone and breathing a cholera air.

1. On investigation we found an outbreak of cholera on board ship which was traceable to the use of milk supplied by a certain milkman.

2. The milkman, who acknowledged and is known to adulterate his milk, dwelt in a hut at Howrah, adjacent to and in immediate vicinity of a cholera polluted tank.

3. A localized outbreak of cholera traceable to a tank polluted with cholera excreta.

From this inquiry I think it may be safely inferred that it is in the highest degree probable that the two simultaneous outbreaks of cholera, the one in Howrah on the land, and the other in the ship in the river, were due to the one and the same cause; that the patients who suffered on board ship and at Howrah had done so in consequence of having taken into their system (swallowing) some cholera poison previously contained in the dejections of a cholera patient; that in the case of the Howrah outbreak the medium for conveying the cholera poison was the water which had previously been polluted; that in the case of the outbreak on board ship the medium for conveying the cholera poison was the milk which previously had water added to it containing the cholera poison obtained from a cholera patient; and lastly, that the connecting link between the two outbreaks was the milk. This investigation also shows how cholera prevailing at a distance may establish itself simultaneously at two widely different places, and yet may be due to a common cause which is preventible.

APOMORPHINE AND MORPHINE IN WHOOPING-COUGH.—DR. P. F. FEDOROFF, of Arkhangelsk, states (*Proceedings of the Arkhangelsk Medical Society*, part 2, 1887, p. 92) that he has obtained good results in whooping-cough by the internal use of the following mixture:

R.—Morphin. muriatic. . .	gr. ij.
Apomorphin. muriatic. . .	gr. j.
Acid. muriatic. . . .	℥ss.
Aq. destill.	℥viij.—M.

S.—A tablespoonful four times a day.

The paroxysms are lessened both in number and frequency after the first few doses of the mixture.—*British Medical Journal*, July 9, 1887.

PURULENT PERITONITIS CURED BY INCISION AND DRAINAGE.—In the *Revue Médicale de la Suisse Romande*, of May 15, 1887, p. 291, DR. E. CEPPI, of Porrentruy, publishes a remarkable case of chronic purulent peritonitis in a previously healthy and robust woman of twenty-nine, which was cured by abdominal incision with drainage. The disease proved to be of gonorrhœal origin, small accumulations of Neisser's gonococci being found in the pus-cells. Similar microbes (diplococci consisting of ovoid cells measuring 0.85 *u*) were discovered also in the purulent discharge from the uterus. This case is the first in which the gonococcus has been found in the peritonitic exudation.

THE BEST MATERIAL FOR NERVE SUTURE.—MR. BOWLBY, of St. Bartholomew's Hospital, writes as follows in the *Lancet* for July, 1887: "The choice of a material for suture is naturally influenced by the same considerations as those which obtain in the similar operation of ligature of vessels, and just as in the latter it is advisable to use a tissue which will not act as an irritant and will be absorbed, so is a similar material indicated in the suture of nerves. In the majority of recorded cases catgut has been used, and I am inclined to consider that for small nerves carbolized catgut is the best material. In those cases, however, in which there is any unusual tension, or in which it is anticipated that, on account of any complication, it may be necessary to disturb the wound, I think that carbolized gut does not possess the proper amount of resisting power, and does not last a sufficient length of time. In such cases I should use by preference a more stable ligature, such as chromicised catgut, kangaroo tendon split into sufficiently small filaments, horsehair, or fine silk; I prefer the two former to the latter. After apposition has been obtained by suture, the limb should be fixed on a splint in such a position as to keep the injured nerve in a state of the least possible tension. The wound should be thoroughly cleansed, all sutures used should be first rendered aseptic, and every endeavor should be made to insure healing by first intention."

COCAINE IN EVACUATING HYDROCELE.—DUBUC used the following with advantage in a case where it was not desired to use an anæsthetic in puncturing a hydrocele. After the injection of this fluid the contents of the sac were evacuated and iodine was injected; the procedure was painless.

Aquæ destillat.	100 parts.
Cocaine hydrochlorat. . . .	1 part.
Boric acid (pure)	3 parts.

—*Annales des Maladies des Organes Génito-Urinaires*, July, 1887.

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THE RESULTS OF GASTRO-ENTEROSTOMY.

In our issue of July 23d we took occasion to consider the results of pylorectomy, and we now wish to present the results of the allied operation of gastro-enterostomy. Both procedures have for an object the reëstablishment of the continuity of the alimentary canal, or rather the relief of stenosis of the pyloric orifice. The first operation aims to be radical in its effect, the second only palliative. We endeavored to show in our last article that, as a matter of fact, neither operation was radical, and that the one which was attended with the least mortality, and the greatest amount of respite to the greatest number, was the one to be preferred.

Since the above opinion was expressed, an elaborate and highly interesting article has appeared in the *Deutsche Zeitschrift für Chirurgie* of June 22, 1887, from the pen of Dr. C. Rockwitz, of Strassburg, in which the results of gastro-enterostomy at the Strassburg Clinic are detailed, and the whole subject carefully considered. Altogether the operation has been performed 29 times, with 16 recoveries from the operation, and 13 deaths. Of these cases, 8 were performed by Prof. Lücke, of Strassburg, with 7 recoveries and 1 death, a success which is phenomenal. We thus see that 55 per cent. of the cases operated on have survived the operation, and 45 per cent. have perished, which affords a marked contrast to pylorectomy, which has a mortality of 72 per cent. when performed for all causes. When performed for carcinoma, gastro-enterostomy has proved fatal in 60 per cent. of the cases, and 40 per cent. have survived for longer or shorter periods. For cicatricial stricture, but 1 death resulted in 7 cases, and the most of those who recovered were radically cured, and were freed from their distress and suffering.

In presenting any statistics in regard to the mortality of gastro-enterostomy, it must be remembered that in almost every case the operation has been performed for conditions which precluded resection of the pylorus; hence the mortality is far in advance of that which is inherent to the procedure; and, likewise, the continuance of the benefits in those who survived is materially shortened for the same reason. Of the 16 cases which recovered, 2 died in one month of marasmus, but with a respite from suffering for that length of time; 1 who was suffering from tuberculous ulceration and stricture of the duodenum, died of marasmus and peritonitis in two months, after having gained 11 pounds in weight during the first month; 1 died in three months, of marasmus; 1 in four months, after gaining 11 pounds in weight; 1 in five months, after gaining 5 pounds; 1 in six months; 1 in fourteen months, after gaining 7 pounds in nine weeks; whilst Rydygier reports one case alive and well seven months after operation undertaken for ulcer of the duodenum; and a second case radically cured from the effects of a cicatricial stenosis of the pylorus.

Socin, after resecting the pylorus for cancer, subsequently performed gastro-enterostomy, with the result of again relieving his patient from her sufferings, and with the gain of 11¼ pounds in four months. Lücke reports one case, operated on for a tumor of doubtful nature, well at the expiration of one year, and increased in weight 15 pounds; another case, by the same surgeon, as well and 3 pounds heavier, thirteen months after operation; and a third case, alive, well, and with a gain of 39 pounds, eighteen months subsequently. The best result yet reported, however, is that of Hahn, who performed the operation two years ago for supposed inoperable cancer, the patient surviving and being not only in good health, but about 54 pounds heavier than before the operation. One case is reported as having been discharged cured in thirty-seven days, and as the operation was for cicatricial stenosis, the result is probably permanent.

We see from the above-mentioned cases, that gastro-enterostomy, whilst it does not secure radical cures in the case of cancer, does palliate the distress to a remarkable degree, and in the case of cicatricial stricture it circumvents the stenosis and restores the patient to a condition of permanent health. As has been stated, the operation has generally been performed as the *dernier ressort*, frequently after attempts at removal, which have materially complicated the case.

We hold that resection of the pylorus is only to be thought of when there are no adhesions to surrounding parts, and when the lymphatic glands are

but slightly involved; in all other cases gastro-enterostomy ought to be performed as a primary operation without any previous attempts to break up the adhesions. If we examine the causes of death after this operation, we find that eight died of collapse and exhaustion in less than three days. One died of internal hemorrhage from the wound and one from peritonitis on the fourth day, whilst one died from exhaustion on the tenth day, due to vomiting caused by the formation of a spur, which obstructed the efferent limb of the bowel. Peritonitis and exhaustion caused the death of two cases on the twelfth and eighteenth days respectively.

As has been stated, the results of gastro-enterostomy as performed by Prof. Lücke are of the most surprising character; not only is his mortality very low, only 12.5 per cent., whilst that of other operators has been over 57 per cent., but the benefits secured by him are also brilliant, one patient with a non-malignant tumor being well one year after operation, another with cicatricial stenosis entirely relieved, whilst one woman with carcinoma survived the operation fourteen months, besides other cases which lived in comparative comfort for short periods.

The reason for the better results of Lücke is not very apparent, but appears to be due largely to the fact that he does not attempt resection of the pylorus if there are any adhesions to surrounding parts, or much glandular involvement, hence, the parts are in a very much better condition for gastro-enterostomy than when a great deal of manipulation has been unsuccessfully done. Another factor is his method of suturing, about eighty sutures being used in most cases, which secures accurate apposition of the edges of the fistula. Stress is also laid on the importance of seizing the first convenient coil of small intestine, instead of searching longer and disturbing the relation of parts in the manipulation necessary to find the first portion of the jejunum. Whatever the explanation may be, the fact remains that Lücke's results put those of all other operators in the shade. In some of the above cases prolonged vomiting, which eventually became stercoraceous, occurred, and marked benefit followed copious irrigations of the stomach.

The article of Dr. Rockwitz is one which will repay a careful study, but we can only cite the more important of his conclusions in regard to the method of operating. 1. All separation of adhesions, isolations, and manipulation in the abdominal cavity ought to be carefully avoided. 2. Previous preparation of the patient is of importance for the success of the operation. 3. The incision in the linea alba is to be preferred. 4. Use the first convenient coil of intestine for the formation of the gastro-intestinal fistula, and avoid much searching and manipulation in the attempt to reach the plica duodeno-jejunalis. 5. The danger of compression of the colon by the mesentery of the raised small intestine is not sufficiently great to demand a complicated and dangerous modification in order to avoid it. 6. In the formation of the fistula employ the original simple method, as the formation of spurs and bends is not avoided by the more complicated procedures. 7. In order to secure a good functional action, the peristalsis of the bowel must correspond to that of the stomach. 8. For the formation of the fistula less depends upon the method of suture than upon its exact and proper execution.

THE ACID CALCIUM PHOSPHATE TREATMENT OF TUBERCULOSIS.

So frequent is the occurrence of local tuberculosis, and so serious are its permanent results when joints are attacked, that a mode of treatment which promises not only the cure of the local disease, but avoids the loss of motion so often resulting after other treatments, is worthy of consideration and trial. In The Medical News of June 25, 1887, p. 710, we described Kolischer's treatment by the injection of acid calcium phosphate, as reported to the Academy of Physicians of Vienna. We are now in a position, from his later reports, to give our readers the details of his method, and his conclusions as to its value, based upon the study of 500 cases.

From the *Wiener medizinische Presse*, No. 24, we learn that the solution used by injection contains 6.5 per cent. of acid calcium phosphate, with 1 to 1000 of free phosphoric acid; for the saturation of gauze, which is used in tamponing tuberculous fistulæ and dressing tuberculous ulcers, a solution of 6.5 per cent. acid calcium phosphate containing 1 per cent. of free phosphoric acid is employed; the proportion of free acid is increased to 2 per cent. where an especially caustic effect is desired.

Previous to injection the surface of the diseased part is disinfected by mercuric chloride; the injection is made with a platinum needle introduced deeply into the tissues: if great pain results, cocaine may be added to the solution. The contents of a Pravaz's syringe may be given at one injection; all injections used were sterilized. The formulæ for these solutions will be found in the Progress columns of this issue of The News.

In the same issue of the *Presse*, Froschauer states that he was led, when studying the influence of phosphoric compounds upon anthrax, to infer their power to influence tuberculosis. He cites the carnivora as less liable to many infectious diseases than the herbivora, and explains this fact by the acid calcium phosphate which is produced in the decomposition of nitrogenous food, before the formation of destructive ammoniacal compounds occurs. He

reasons that the administration of the acid phosphate will increase the natural resistance of the carnivorous organism, and greatly assist it in its struggle with tubercular infection.

Kolischer's experience (*Wiener medizinische Presse*, July 17, 1887) leads him to consider his method especially valuable with children, in whom, in many cases, speedy cures result, while others recover after prolonged treatment and overcoming of tedious complications. In rare cases it is without effect. The gauze saturated with calcium phosphate solution has been found an excellent dressing material in the treatment of caries.

Patients at about adolescence are among the most favorable cases; those whose disease has resisted other methods of treatment, and in whom extensive caries exists, were generally cured in from three to four months. The percentage of unimproved cases among these patients was very small. In older persons persistent treatment was much less successful. When tuberculosis was deeply seated it was not influenced until suppuration had reached the surface, when free drainage and tamponing with the gauze were generally successful. External tuberculosis among the phthisical was rarely cured; cold abscesses could be emptied, tamponed, and healed, but the general infection was uninfluenced.

Albert, in whose clinic this treatment is in use, believes that it is a distinct advance in surgery, and is destined to improve markedly the results obtained in localized tuberculosis.

A NEW AID IN THE DIAGNOSIS OF GASTRIC DISEASE.

It is a point of capital importance in the diagnosis and treatment of diseases of the stomach, to determine the motor power of the organ, or, to be more accurate, the period that elapses between the entrance of food through the cardiac orifice and its exit through the pylorus. The chemical properties of salol have enabled Ewald (*Wiener med. Presse*, 1887, No. 28) to accomplish this desirable object. The decomposition of this substance, and consequent appearance of salicylic acid in the urine, does not begin until it has passed into the small intestine. Salol may be mingled with the contents of the stomach and kept at the temperature of the body for hours without decomposition. This fact was determined by Ewald in twenty-five experiments. On the other hand, it is rapidly decomposed in the alkaline secretions of the intestine. In healthy persons salicylic acid appears in the urine in from one-half to one hour after the administration of salol. If this limit is overstepped, the delay may be attributed to pathological changes in the stomach. In eight typical cases of dilatation of the stomach studied by Ewald, salicylic acid could not be found in the urine until from two to three hours after the ingestion of salol, and in two obscure cases the same observer was enabled to detect dilatation by means of this delayed reaction.

This interesting observation is applicable, not only as a means of diagnosis, but as a test of the effect of treatment; for, by means of it, Ewald has been enabled to determine that both electricity and massage hasten the passage of the chyme into the intestine.

THE VALUE OF STROPHANTHUS HISPIDUS IN HEART DISEASE.

The very fact that this drug came before the profession of this country and abroad with the recommendation of Fraser, of Edinburgh, is to a certain extent a guarantee of its value, and nothing except its scarcity has retarded its more general use. Fortunately, the price has been reduced considerably since the first rush for its possession has passed away, and it now stands ready to enter our list of remedies, there to be tested side by side with its older fellows.

While the profession in general have as yet had but slight opportunity to test this drug for themselves, it has been tried with favorable results by Dana and Smith in New York, and by quite a large number of clinicians in England and on the continent. In the June and July numbers of the *Therapeutische Monatshefte*, Dr. Emil Pins, of Vienna, has an interesting clinical report regarding its value. Before calling further attention to his results, however, we will remind our readers that, according to the studies of Fraser and Brunton, this drug is nearly identical with digitalis in its action on the heart and blood-vessels, and in its influence on the secretion of urine. It contains an active principle, which is a glucoside, and is called strophanthin, but which has not been generally used, the tincture of the seeds being most commonly employed.

Pins has found that this tincture acted admirably in those cases of cardiac failure depending more particularly on valvular disease, and produced the most desirable results where the lesions caused dropsy and consequential need of increased renal action. Under the use of strophanthus the pulse, heretofore weak, rapid, irregular, and flurried, became slower and more powerful while the anasarca steadily decreased. In cardiac dyspnœa, both direct and indirect in its causation, it relieved the patient, and in every way proved itself to be the equal of digitalis. The belief reached by Dr. Pins is that strophanthus is eminently a heart tonic, and is especially useful in cases of chronic Bright's disease, and he also agrees with all the other recorders of bedside studies with this drug, that its diuretic properties are of great value.

The practitioner has heretofore often found to his alarm that his patient has gradually become somewhat accustomed to digitalis, so that the dose has

to be constantly increased, and has sorely felt the need of some drug which might possess similar powers. So much reliable evidence has now been brought forward as regards strophanthus, that it would seem that such a drug has at last been found, and the thanks of the profession are once more due to Professor Fraser for his last addition to our knowledge of therapeutical agents.

THE Illinois State Board of Health, at a recent meeting, passed a resolution which defines "medical colleges in good standing" in Illinois as follows:

Resolved, That the phrase "medical colleges in good standing," in the first section of the Act to Regulate the Practice of Medicine, approved June 16, 1887, is hereby defined to include only those colleges which shall, after the sessions of 1890–91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation, and shall otherwise conform to the Schedule of Minimum Requirements heretofore adopted by the Board.

THE enticing yellow tea-bun is not the only article of diet that is enriched with chrome yellow. Maccaroni and vermicelli are frequently found in the shops tinctured with this same derivative of lead; and these are sold to the unwary under the trade appellation of "egg-maccaroni," and the like. It is needless to say that this is a rank deception and fraud, and dangerous in the proportion that it deceives. Health officials should confiscate these "egg-foods" wherever found. Highly colored candies, and yellow sugar used for decorative purposes, have been found, also, to owe their attractive color to the fatal chrome yellow.

A PRELIMINARY programme has been announced for the meeting of the International Medical Congress. The Congress will be opened on Monday morning, September 5th, in the presence of the President, the report of the Secretary General submitted, and an address of welcome will be delivered by the Secretary of State, the Hon. Thomas F. Bayard. In the evening a conversazione will be held at the Pension Office. General meetings will be held on each morning of the week, and meetings of the sections will also be held on each day except Saturday.

Addresses will be delivered in general session, by Dr. Austin Flint, of New York, on "Fever, Its Causes and Rational Treatment;" by Dr. Mariano Semmola, of Naples, Italy, on "Bacteriology and Its Therapeutical Relations;" by Dr. P. C. Unna, of Hamburg, Germany, on "The Relations of Dermatology to General Medicine;" by Dr. C. Fielding Blanford, of London, on "The Treatment of Recent Cases of Insanity in Asylums and in Private Houses;" by Dr. A. Lutaud, of Paris, on "The Influence of Discoveries of American Surgeons on the Development of Gynecology in Europe;" and by Dr. Neudorfer, of Vienna, on "The Military Medicine of the Present and that of the Near Future."

The social features of the meeting will be a reception by citizens on Wednesday evening, a general reception and buffet banquet at the Pension Office on Thursday evening, and a trip to Mount Vernon on Saturday afternoon.

A Bureau of Information has been established in the Hoffman House, New York, for the benefit of delegates from foreign countries.

THE Marine-Hospital Bureau is informed that smallpox and yellow fever are raging in Havana, Cuba. During July there were 104 deaths from yellow fever, and 112 from smallpox.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-third Annual Meeting, held at New London, Conn., July 20 and 21, 1887.

(Specially reported for THE MEDICAL NEWS.)

(Concluded from page 162.)

RETINITIS PIGMENTOSA TREATED BY ELECTRICITY.

DR. M. STANDISH, of Boston, reported a case. The patient was a woman, aged thirty-three, myopic 1.50 D. She had worn correcting glasses since seventeen years of age. When first seen, in April, 1886, her sight had been failing for three years, for the last three months very rapidly, so that she could not go on the street alone after dark. Upon ophthalmoscopic examination characteristic patches of retinitis pigmentosa were found in the periphery of the fundus in each eye. Her vision was right, $\frac{12}{XL}$; left, $\frac{12}{L}$; and the fields of vision were limited to less than 20° in the vertical and horizontal axes. The only treatment had been the use of the constant current, of such strength as could be easily borne. This has been applied, once in five days, during the last fifteen months. The present vision is, right, $\frac{12}{XXX}$; left, $\frac{12}{XV}$; and the fields have now vertical and horizontal axes of 70°. She now goes on the streets after dark with safety.

DR. H. DERBY, of Boston, reported a case in which there was poor vision, greatly contracted fields, and a large amount of pigment in the fundus, blue being the only color recognized. Under similar treatment, central vision improved, the fields widened, and the perception of red and green was reëstablished.

ASEPTIC CATARACT EXTRACTION WITH IRRIGATION.

DR. C. H. WILLIAMS, of Boston, reported five cases of irrigation of the anterior chamber, after cataract extraction, with a one-half per cent. solution of chloride of

sodium, as recommended by Dr. McKeown. Instead of a syringe, a glass flask was used, having a capacity of 50 c. c. Two glass tubes were blown into the sides of the flask, one being drawn out to form a nozzle, which could be easily inserted into the anterior chamber; and the other, having a rubber tube and mouth-piece attached, so that the force of the stream could be easily controlled by the operator; and the flask holding enough fluid to complete the irrigation without withdrawing the tube. The irrigating instruments, and the two per cent. solution of cocaine, were sterilized in a steam sterilizer. This was not found to injure the anæsthetic properties of the cocaine. The rest of the instruments and the dressings were sterilized by dry heat at 150° Cent. To determine the efficiency of a solution of biniodide of mercury, used for a preliminary washing out of the conjunctival sac, some experiments were made with plate cultures, at the laboratory of the Harvard Medical School, through the kindness of Dr. Ernst. Equal amounts of the biniodide of mercury and iodide of potash were dissolved in water, and added to 10 per cent. nutrient gelatine, to give a series of strengths up to 1 to 5000 of the biniodide to the gelatine. Ten days after exposure no growths of bacteria were found on any of these plates; although on unprotected plates, exposed at the same time, there was an abundant development of colonies of bacteria. Gelatine of the strength of Panas's solution (1 to 20,000) of the biniodide, showed after four days an average of 1.5 and 0.8 colonies of bacteria to the square centimetre of surface in two series of plates, while on unprotected plates, exposed at the same time, the average was 10.7. In two of the cases of extraction a suture was passed through the small piece of conjunctiva left at the apex of the corneal flap, to unite it to the conjunctiva above. This was found to hold the wound well in place. All the extractions were done without iridectomy; and a layer of iodoform was dusted along the edge of the closed eyelids just before applying the bandage.

Dr. L. Howe thought that we must learn the special resistance to microbicides, of each particular kind of bacteria. Then, again, experiments with pathogenic bacteria, made in the rabbit, may not indicate their effect on man. And their action on different parts of the same organism may be different. Bacteria that are dangerous when introduced within the eye may be comparatively harmless in the conjunctival sac.

Dr. E. Gruening had done within a year 16 extractions without iridectomy. In 11 cases a perfect pupil was secured; in 7 the iris had to be removed subsequently, or synechiæ were established. He washed out the conjunctival sac with a saturated solution of boric acid. Being able by manipulation to get this sucked into the wound in sufficient quantities, he had not used direct irrigation of the anterior chamber. No eye had been lost. He had also done 13 extractions with iridectomy during the same period.

CASE OF CONGENITAL, ZONULAR OPACITY AROUND THE FOVEA.

Dr. O. F. Wadsworth, of Boston, reported a case occurring in a female infant, aged eleven months, the sixth child of Jewish parents; first four healthy, the fifth had died when eighteen months old. The mother had been sick while carrying the last two children. Father healthy. Its muscular system seemed undeveloped, and it took but little notice of things around it. During the first ophthalmoscopic examination it fixed its eyes on the mirror. The greater part of the fundus appeared normal, as was the fovea. Around the fovea was a zone of a diameter one and a half times that of the disk, of light-gray opacity, over which the smaller branches of the retinal vessels could be seen. Five months later the child took no notice of the mirror, or anything else. The optic disks were gray and devoid of small vessels. The pupils responded very faintly to light, and the child had grown thinner, muscles still undeveloped.

Dr. H. Knapp said that the case is a rare and characteristic one, of what appears to be a general arrest of development of the cerebral cortex. A case he had seen improved apparently during last summer, but in winter grew worse and died. The disks, which early in the case were pale, later became completely atrophic. An autopsy showed marked change in the cerebral cortex; and an arrest of development of the whole nervous system. He believed such cases would be more frequently recognized if ophthalmologists saw more of the cases of brain disease in infancy.

ALBUMINURIA OF PREGNANCY, SEPARATION OF BOTH RETINAS, REPLACEMENT.

Dr. O. F. Wadsworth had seen the case of a woman seven and one-half months pregnant, with œdema of the lids, urine loaded with albumen and containing casts; indistinctness of vision was found to be attendant on extensive separation of the retina in both eyes. After the use of one-sixth of a grain of pilocarpine hypodermatically, portions of the retinas became reapplied. The dose was repeated and the retina became still more generally replaced. At the same time it became more affected with grayish opacity. Premature labor occurred with convulsions; and unconsciousness continued sixty hours, at the end of which time only movements of the hand before the eye could be seen. Two weeks later vision was improving, but there was extensive grayish opacity with patches of white exudation and small hemorrhages in the retina. Six weeks later there was no separation of the retina, and vision=right Jäger 13, left Jäger 5. Since that time it is stated that her vision has gradually improved.

Dr. S. D. Risley thought there were cases of retinitis connected with the albuminuria of pregnancy, that we were not justified in allowing to proceed to term. He had reported one last year. Since then he had seen another where only the shadow of the hand could be perceived. This patient soon after aborted spontaneously in the sixth month. This was attended with unconsciousness, followed by aphasia. But the intense swelling of the retina and snow-bank exudation has entirely disappeared; and there has been great improvement of vision.

COLOBOMA OF THE IRIS, CHOROID, AND OPTIC NERVE.

Dr. B. A. Randall presented drawings of three cases. It had been claimed that so-called underlying conus was a variety of coloboma; but one of these cases presented both coloboma and underlying conus. In one the disk seemed to present a second *porus opticus*. In another the bottom of the coloboma of the nerve

presented a refraction 13 D. higher than the neighboring fundus.

A PECULIAR FORM OF GRANULAR CONJUNCTIVITIS ASSOCIATED WITH ICHTHYOSIS.

Dr. F. Buller, of Montreal, reported two cases; both occurring in boys suffering from ichthyosis. The first, aged fifteen, had suffered from rheumatism and iritis. two years before, and six months later asthenopia. His parents were healthy and free from any skin affection, as were four older children; but two brothers younger than himself had the same condition of skin. The second was seven years old, and had weak eyes for two or three years. Parents free from skin disease. There was hyperæmia of the ocular conjunctiva. Compound hyperopic astigmatism. With correction, vision $= \frac{6}{6}$. In both the conjunctiva of the lower lid was swollen, smooth, pale and glazed, and presented tenacious yellowish mucus. The upper lid was thickened, and its conjunctiva pale and smooth, but presenting flattened elevations, some mushroom shaped, semi-transparent, containing minute red dots, and extremely hard. Microscopical examination showed these masses to consist of highly developed granulation tissue, mainly white fibrous tissue. The first case was treated for a year with the various remedies for trachoma without benefit. He had seen other cases, presenting the same local lesions, which remained equally rebellious to treatment; but they had not been examined for skin disease. There seemed to be not the least tendency to acute exacerbations. The secretion from the conjunctiva was entirely different from that of ordinary trachoma. In the family of each there were several children, and none of the others had showed any affection of the eyes; so it could not be contagious. The changes were most characteristic on the upper lid, where the structure of the conjunctiva most nearly resembles that of the skin. He proposed that this affection should be called *ichthyosis of the conjunctiva*.

MODIFICATIONS OF THE OPHTHALMOSCOPE.

Dr. W. S. Dennett, of New York, showed his electric light attachment, or handle, for the Loring ophthalmoscope. It could readily be fitted to other forms of the instrument. Also a cheap and satisfactory battery for supplying the current for it or for the galvano-cautery. He found it much easier for beginners to get a good view of the fundus with the electric lamp as the source of illumination; and that the light was better and more manageable.

Dr. L. Howe showed an ophthalmoscope with a good lens disk which packed together into the compass of a small pill-box.

Dr. S. D. Risley presented an ophthalmoscope with cylindrical lenses. He had modified Loring's ophthalmoscope by adding two slides, like those proposed by Dr. Jackson, which moved just back of the mirror. These contained convex cylindrical lenses with their axes parallel to the stem of the instrument. One slide contained 0.50, 1, 1.50, 2, and 2.50 D., and the other 0.25, 3, 4, 5, and 6. With these 0.25 D. intervals were obtained up to 3 D., and 0.50 D. intervals to 8.50 D. The spherical lenses were the same as those in the common form of Loring's ophthalmoscope with the accessory quadrant. The direction of the cylinder axis could readily be changed by merely varying the direction of the handle from the perpendicular. It was well known that in most cases of astigmatism the meridian of greatest refraction was vertical or very nearly vertical; and even when it was at right angles to this the cylinder could be adjusted to it. Some weeks' use of the instrument had shown it was capable of doing all he had expected of it. The instrument had been made by Queen & Co., of Philadelphia.

Dr. S. M. Burnett, of Washington, presented an ophthalmoscope with modifications, consisting, first, in a clip on the back of the instrument, in which the cylinders from the cases of test lenses can be inserted. A graduation around the edge of the mirror-plate shows the inclination of the axis of the cylinder. This, he claims, is very useful for verifying the diagnosis of astigmatism by other methods; and also enables us to see the fundus of an astigmatic eye free from its anomalous refraction. Second, two superimposed disks containing lenses which, singly and in combination, give 47 numbers (22 plus and 25 minus), with a regular interval of 0.5 D, up to 10.5 D. Third, a plane circular mirror, in front of which is swung a tilting mirror. The plane mirror does not interfere with the tilting mirror when in use; and when it is desired to use the plane mirror alone, the tilting mirror can be detached from its upper bearing, and will swing on its lower bearing, out of the way. The instrument is very light. It is made by Queen & Co., of Philadelphia, and its cost is about twenty dollars.

Dr. O. F. Wadsworth had for several years used a clip on the back of his ophthalmoscope to hold cylindrical lenses, and thought that Dr. H. D. Noyes had shown such an arrangement before the Society.

Dr. Burnett did not claim originality; he had merely combined in convenient form what before had been used on different instruments.

Dr. E. Jackson thought that since astigmatism blurs the retinal image only about half as much as the same degree of hyperopia or myopia, and since 0.50 D. was the smallest interval of practical value between the successive spherical lenses of the refraction ophthalmoscope, that the interval between the cylinders should be a whole dioptre. The Loring ophthalmoscope might be modified by adding the two slides, removing the quadrant, and placing the four lenses from it in one slide; and, in the other, using 1, 2, 3, 4, and 5 D. concave cylinders with their axes perpendicular to the stem of the instrument.

Drs. W. S. Dennett and P. A. Callan had independently tried using a small Stokes lens back of the ophthalmoscope, but had abandoned it.

Dr. B. A. Randall was still using with satisfaction the arrangement of cylindrical lenses shown to the Society a year ago.

PHOTOGRAPHS OF THE FUNDUS OF THE EYE.

Dr. L. Howe showed a series of these obtained from the living human eye. The exposure was about fifteen seconds. The original negatives had to be very small to get an impression strong enough. These were subsequently enlarged. The great difficulty had heretofore been to get a formula for a plate sufficiently sensitive to the red rays returned by the fundus.

SMALL TEST LENSES AND TRIAL FRAMES.

Dr. E. Jackson exhibited a set of test lenses one inch in diameter. This decrease in the size of the lenses effected a reduction of more than one-half in the weight of lenses and trial frames. They were also made plano-convex and concave, giving less spherical aberration, making it easier to combine two of them, and capable of being used to neutralize accurately other lenses. Additional lenses were introduced. In the trial frames the temple was attached near the lower part of the lens-carrier, instead of opposite the middle, so that the lenses could be introduced and removed in the most convenient direction directly toward the temple.

CASES AND VERBAL COMMUNICATIONS.

Dr. Jackson presented, for Dr. C. A. Oliver, pictures of two cases, one of double chorio-retinitis, with partial degeneration of the optic nerve, associated with curious lymph extravasation into the retina and vitreous; the other, of coloboma of the iris, lens, and choroid.

Dr. D. B. St. J. Roosa offered the history of a case of recurrent paralysis of the motor-oculi, associated with migrane, in a young man, commencing at fourteen and increasing in severity.

Dr. John Green had noticed, after an attack of iritis, an increase in his own myopia of 1.50 D., which disappeared gradually after recovery. He had since noticed the same thing in some of his patients, and believed the myopia to be a consequence of the iritis.

Dr. O. F. Wadsworth had observed the same phenomenon.

Dr. B. A. Randall had been consulted by a man, aged twenty-two, with myopia of 2.50 D., who complained of a spot before the right eye, which had first been noticed ten days before. He found a moderate choroidal trouble and a well-marked posterior polar cataract. He could not believe it to be of such recent origin until during the succeeding month, when it changed rapidly in shape, extended, and became obscured by a similar opacity starting on the anterior surface of the lens. Apparently there was no increase of myopia.

The following were

ELECTED MEMBERS:

Drs. J. B. Emerson, of New York; H. F. Hansell, of Philadelphia; J. O. Tansley, of New York; T. Y. Sutphen, of Newark, N. J.; M. H. Post, of St. Louis; E. C. Rivers, of Denver City, Col.; George R. Cutter, of Brooklyn; D. C. Cocks, of New York; H. S. Oppenheimer, of New York; Charles McIlwaine, of Trenton, N. J.; David DeBeck, of Cincinnati.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President.—Dr. William F. Norris.
Vice-President.—Dr. Hasket Derby.
Secretary and Treasurer.—Dr. O. F. Wadsworth.
Corresponding Secretary.—Dr. J. S. Prout.

To represent the Society in the Executive Committee, to arrange for the Congress of American Physicians and Surgeons, at Washington, in September, 1888, Dr. William F. Norris was chosen, and Dr. D. B. St. J. Roosa, alternate; with the proviso that such action did not bind the Society to approval of all the details of the present outline plan for such meeting.

The Society adjourned to meet at the Pequot House, New London, Conn., on the third Wednesday of July, 1888.

CORRESPONDENCE.

LETTER FROM STRASSBURG.

Kephir—Acute Osteomyelitis—Fracture of the Skull—Gastro-enterostomy.

A substitute for koumiss is coming very generally into use here and in Switzerland, which has the great advantage that it can readily be made in any place, and those who have used it largely speak very highly of it. It is the kephir of those Tartars who, having no horses, are dependent upon cows' milk from which to manufacture their milk-wine. Kephir is the product of the fermentation produced in milk by the presence of a peculiar ferment, when the fermenting milk is treated in a particular way. The method of its manufacture is kept as secret as possible by those who make a business of it. So successfully have they guarded their secret that when the hospital authorities attempted to make their own kephir, they were obliged to abandon the idea, as success did not crown their efforts.

Kephir contains less alcohol than koumiss, but is more nutritious. Kussmaul, Freund, and others here, are thoroughly satisfied with the results of its use, and are loud in its praise.

A man with an acute osteomyelitis in the head of the tibia was transferred from Prof. Kussmaul's department, to which he had been consigned as a case of pneumonia, to the surgical hospital. He had a few moist râles, a bloody sputum, and a slight consolidation, with an exceedingly high fever. The history was as follows: In attempting to jump from a street-car, while in motion, he fell on his knee, and bruised it against the paving-stones. The skin was scraped away from over the tuberosity of the tibia, but not to any great extent. At the time he paid no further attention to it, but on the second day he had a very severe chill. The symptoms of pneumonia, as above given, came on, and he was sent to the medical clinic. There the condition of his leg was noticed, and he was transferred to the surgical. He came in a semi-stupid, typhoid condition, with a morning temperature of 104½°. The leg was swollen, and highly inflamed, with deep fluctuation which could be readily determined in the upper part. It was now but the seventh day after the injury. He was given chloroform, and the collection of pus, which was situated between the periosteum and the bone, was cut into with great care, in order to avoid the joint. Several ounces of a thick, dark-colored pus escaped. The bone was denuded for a distance of two or three inches along the shaft. With a narrow chisel, an opening was made into the medullary cavity, where another collection of pus was found in a large abscess cavity, which was thoroughly cleansed and disinfected. A drainage-tube was drawn through the leg, a counter-opening having been made posteriorly, the entire leg enveloped in aseptic bandages, and the patient sent to the ward.

This was evidently a case of infection through the wound of the most acute character. The high fever was accounted for by the great pressure which both col-

lections of pus exerted upon their surroundings, and the lung symptoms to a possible secondary process in the lungs, due to the formation of fatty emboli.

A comminuted fracture of the side of the skull, complicated by fissures across the vault and base, was recently examined by Prof. von Recklinghausen, in the Pathological Institute. The man had fallen a distance of some twelve or fifteen feet, striking on the side of his head and right shoulder. Upon the third day he was brought to the clinic. All symptoms of concussion and compression had passed away. He spoke intelligibly in answer to such questions as were put to him, but a few hours later he died. There was a scalp wound on the right side of the head, some three inches above the ear. A large contusion, with subcutaneous extravasation of blood over the right side of the face, and consequent discoloration not only of the orbit, but of the entire half of the face. The shoulder and pectoral region of the right side were the seat of a similar contusion.

Prof. von Recklinghausen, as is his custom, gave with painful exactness a description of every external mark upon the body, as well as of all the pathological changes within. The main fissure ran in a half circle some two inches above the external auditory meatus, while three secondary fracture lines, branching out from this, passed across the vault, the one toward the orbit of the same side, another directly over the skull, almost to the external auditory meatus of the opposite side, while the third passed back across the occiput. Beneath the main fissure were several fragments, which were only held in position by the soft parts, and which were not depressed in the least. The largest was more than an inch long. Removing the skull-cap exposed a thin clot between the skull and the dura mater, in the region of the middle meningeal artery. The dura mater was torn in a line parallel to the artery, but a little behind it. Through this opening, the clot extruded, and was spread out in a thin layer over the brain. Here there was no destruction of the brain-tissue, but beneath the loosened fragments the dura was torn, and a superficial destruction existed. The hemorrhagic extravasation passed into the external end of the Sylvian fossa. Slight extravasations of blood were found in the right posterior and the left middle and posterior fossæ, between the skull and the dura mater. None of the cranial nerves were injured.

The fracture of the base was in the right anterior fossa, almost entirely. It passed around three-fourths of the periphery of this fossa, when it crossed the tip of the pyramidal process of the temporal bone, and circling around the foramen magnum, ended in the jugular foramen. A comminuted fracture of the outer third of the clavicle, and simple ones of the first seven ribs, completed the list of broken bones. The examination of the internal organs revealed nothing of interest, except a perforation of the parietal pleura by a splinter of the second rib, and an extravasation of blood in the anterior mediastinum.

This case is of interest when it is considered that after a careful examination the surgeon diagnosticated the fracture of the base, but not of the vault. The apparent damage to the brain was but slight in comparison to the injury of the skull. Usually with such extensive comminuted fractures there are symptoms of compression, or at least irregularities of the surface, that render the diagnosis easy. In this case the loosened fragments escaped the examining hand, not only of the surgeon, but also of the distinguished pathologist, who palpated the head with great care before beginning his dissection.

The report of Dr. Rockwitz, one of the assistants in the surgical clinic, upon the gastro-enterostomies which Professor Luecke has performed, is by far the most brilliant record that has been made in this operation. Curiously enough, the same number of cases have been operated upon as in the clinic of Prof. Billroth, where, it is well known, Woelfler first made the operation in 1881. In Vienna eight cases have been operated upon, of whom five died shortly after the operation. Of Prof. Luecke's cases not a single one died immediately after the operation. One died two weeks later, of pneumonia and inanition. The cases previously reported numbered twenty-two; or, if the first case of Luecke be excluded, but twenty-one. Of these, seventeen were for cancerous strictures, and four for non-cancerous. Of the first category, twelve died from the operation, a mortality of seventy per cent. In the second category there was but one death, a mortality of twenty-five per cent.

Luecke operated six times for cancer, and twice for stricture. The cancerous cases were between the ages of thirty and fifty. With the exception given above, they all recovered from the operation, and lived at least several months in comparative comfort. One survived the operation fourteen months. The last one operated upon was living when the report was made. Both cases of non-malignant strictures recovered, and seem to be permanently relieved; a mortality of but sixteen per cent. for the malignant cases against seventy per cent. from Billroth's clinic. Several of the cases were examined after death, and the relations of the intestines and the condition of the fistulæ were generally found to be satisfactory. In one case, however, the passage into the efferent arm of the loop of intestine was so distorted by cicatricial contraction that it was difficult to introduce a probe from the stomach into it. The adherent arm was distended with bile and pancreatic secretion.

The operation, which is necessarily tedious, lasted usually from an hour and a half to two hours. A portion of the stomach-wall was first selected that was free from bloodvessels. Two clamps with parallel arms are then so applied to a fold of the stomach as to prevent its contents from gaining access to the field of operation. In selecting the fold of small intestine, to be applied to the stomach, Luecke has never followed Woelfler, who directs that the upper end of the jejunum must be carefully sought for, and gives minute directions to be followed in securing the loop to the stomach-wall. All of this is regarded here as superfluous, and positively dangerous, as to follow these directions explicitly extends the time of the operation, and introduces new sources of failure. The rule here is to select the most convenient fold, and the object to establish a communication between it and the stomach as rapidly as possible. The result certainly justifies the teaching. A small portion of the selected fold is taken between the fingers, and emptied of its contents by gentle pressure. This portion is then secured in clamps similar to those placed upon the stomach. The formation of the opening and the union between the intestine and stomach are made as usual.

The twenty-nine reported cases give a mortality of

about forty-four per cent. from the operation itself. As this operation has proved so successful here, the tendency is to make it in preference to pylorectomy. This latter operation has never proved very successful, as its record of seventy-two operations for cancer, with an immediate mortality of fifty-five cases, or seventy-five per cent., conclusively shows. Therefore, Rockwitz would restrict the indications for the radical operation to that very small percentage of cases, the first class of v. Hacker's, in which we may hope for a permanent cure. The palliative operation has an immediate death-rate which is much less, and offers to all other cases as much hope as the radical.

Strassburg, July 11, 1887.

NEWS ITEMS.

Tenement House Inspection in New York.—The Health Department of New York City has set in operation a branch which is somewhat novel in sanitary work, as it unites the curative with the preventive practice of medicine. Thirty-seven young doctors, who have had their capacity established by the Civil Service Board, have been started out by the Health Department under orders to make house to house inspections of tenement houses, to discover if there are cases of illness which demand their attention, and to make a report on the sanitary condition of the premises. The doctors have authority to prescribe nourishing diet in addition to medicines, which are to be furnished free of cost when the family is too poor to pay for the supplies. Free passes to the excursions of the St. Johns's guild, are distributed at the discretion of these sanitary doctors. The city has appropriated $10,000 for this service and the number of physicians in the corps will be increased to fifty very soon. In sending out these young medical inspectors, Dr. Bryant, the recently appointed health commissioner, used these words: "Teach the poor people that you are their friends, and you will inspire them with confidence. Do unto them what you would expect to have done unto you under similar circumstances. Do not be carried away with the idea that you are a Board of Health representative and have great authority, but be gentlemen. If you find that some families, where a contagious disease exists, have employed a family physician, avoid making a diagnosis merely to confirm that doctor's views. Such a course is unprofessional and unmanly. Learn the origin of the disease and advise with the regular medical attendant, as to the best methods to be devised to check a spread of the disease among the families in the same house or neighborhood."—*Sanitary News*, July 23, 1887.

A New Hall of Anatomy at Vienna.—A large and completely equipped hall of anatomy will shortly be erected for the Vienna Institute. It will be lighted by electricity, and furnished with every convenience for research; its estimated cost will be $240,000.

Official Examination of Food in Russia.—A station is to be established in St. Petersburg for the examination of food materials offered for sale in the city. It will be under the charge of scientists appointed by the government.

Professor Virchow will attend the Congress of Hygiene at Vienna, and will spend the remainder of his vacation in Egypt, in company with Professor Schliemann.

Death by Opium Poisoning of a Celebrated Bone-setter.—Hutton, of Queen Anne Street, London, a noted bone-setter, took "black drops" by mistake, and died on July 16, 1887. He was a man of powerful development, noted for his skill in "bone-setting" in defiance of surgery, and by the manipulations known to his craft.

An Epidemic of Convulsions.—A curious outbreak of convulsionist mania, analogous to those which occurred from time to time during the Middle Ages, is reported to have shown itself at Agosta, in the province of Rome. For some weeks past the country people have been laboring under the delusion that the district is under the immediate government of the Evil One, and before retiring to rest they carefully place on the threshold the broom and salt, which are credited with the power of keeping off evil spirits. Many of the younger women have epileptiform attacks, during which they utter piercing shrieks, and are violently convulsed. So serious had the condition of things become, that the syndic of Agosta found it necessary to inform the Prefect, who sent detachments of soldiers into the district in order to calm the apprehensions of the inhabitants. The contrast between this strictly physical way of dealing with the disease and the more imposing but less effectual religious ceremonies formerly employed must be interesting to historical students. As a natural consequence of this condition of mental perturbation, the country is overrun with quacks who claim to possess the only infallible remedy for the seizures. One of these nostrums, the vender of which was making a rich harvest from its sale, was found on analysis to consist of earth, snuff, and borax. Three medical men who were commissioned to investigate the cause and nature of this extraordinary affection, came to the conclusion that it was an epidemic of hysteria. They examined a number of the sufferers, mostly young women, some of whom were alleged to have vomited nails, horseshoes, and other equally indigestible substance, while others barked like dogs. Several of them were removed to Rome for treatment in the hospitals there, and measures have been taken to check the spread of the mischief. In a milder degree, this contagious form of hysteria is not infrequent, especially in places where ignorance and superstition favor manifestations of nervous disorder. The worst excesses of popular outbreaks, like the French Revolution, have been attributed to similar influences, and with every appearance of justice.—*British Medical Journal*, July 23, 1887.

Secularization of Paris Hospitals.—By a vote of 64 out of 71, the Municipal Council of Paris has determined to instruct the Administration of Public Assistance to place five hospitals, now controlled by Sisters of Charity, under secular charge before January, 1888. Among these are the Charité and the Hôtel-Dieu.

Death from Antifebrin.—Dr. E. von Quast, of Kansas City, reports in the *Kansas City Medical Index*

a death which occurred in his practice from the administration of antifebrin in four grain doses every two hours during a day. The physician's orders called for one dose in the morning, an evening dose to be ordered by the physician, if needed, at his evening visit. Cyanosis and collapse were the fatal symptoms.

DEATH BY ELECTRICITY.—M. D'ARSONVAL has been conducting some experiments for the purpose of preventing fatal accidents from the use of electricity. He has come to the conclusion that electrical currents are not dangerous until a power of 500 volts is reached, and he has devised an ingenious plan by which the extra current which occurs at the moment the current is broken, and which is the chief source of danger, may be annulled or neutralized. A V-shaped tube, made of an insulating material, is filled with mercury and is interposed in the main current. In order to close the main current a tap is turned and the machine is unprimed without giving an extra current spark. Or a glass tube is filled with mercury and dipped into a reservoir containing mercury. This tube is provided with a ground stopper, which not only suppresses the extra current, but interposes any resistance in the current. The invention seems to be original and ingenious, but unless considerable care be taken, even with its assistance, danger is still imminent. Another observation made by D'Arsonval is that extra currents from the dynamic electricity and alternating currents do not produce serious organic disruption of the living tissues like discharges of statical electricity. This, however, is not a new observation. The special disruptive and fatal effect of the statical discharge has long been known in this country, and was most fully brought out in Dr. Richardson's experiments on death by electric shock conducted in the Royal Polytechnic Institution in 1869. In those researches sheep and other animals were killed by the statical discharge, and the cause of death was shown to be due to the sudden expansion of gaseous parts of the blood and tissues, by which organic lesions of the most extensive kind were induced. In one of this series of experiments the skull of a dead animal was fractured by the statical discharge, and arborescent markings of external veins, distortion of large veins, rupture of the heart, ecchymosis, rupture of the stomach, and decomposition of the blood itself, from the same kind of discharge, were phenomena traced to disruption from gaseous expansion. At the same time the statical discharge does not always kill. It may simply stun, or cause a temporary anæsthesia, or produce a state resembling catalepsy, followed by recovery.—*Lancet*, July 2, 1887.

SEPTICÆMIA AT THE PRESENT TIME.—DR. SENN writes as follows from Germany to the *Journal of the American Medical Association*, of July 2, 1887: "There is certainly a great deal of truth in the statement made by the famous Robert Koch, in answer to my question relative to the nature of septicæmia, that this disease is beyond the grasp of the pathologist in Germany, as antisepsis had succeeded in almost exterminating the disease in that country. I sympathize sincerely with the pathologists, but rejoice at the results obtained by Joseph Lister and his followers in expunging from the catalogue of diseases one of the most fatal and fearful complications of the obstetrical and surgical wards. In the face of these facts who can doubt any longer the efficiency of antiseptic precautions in preventing infection? Who will dare to ridicule the honest, conscientious surgeon and obstetrician in his efforts to protect his patients against infection? Who will have the courage to recommend a pad of infective germs as a safe dressing for penetrating wounds of the abdomen? Let history, science, and the combined experiences of thousands of honest physicians and surgeons answer these questions."

CARBOLIC ACID A SAFEGUARD AGAINST INSECTS.—Many people do not know how easily they can protect themselves and their children against the bites of gnats and other insects. Weak carbolic acid sponged on the skin and hair, and in some cases the clothing, will drive away the whole tribe. A great many children and not a few adults are tormented throughout the whole summer by minute enemies. We know persons who are afraid of picnics and even of their own gardens on this account. Clothing is an imperfect protection, for we have seen a child whose foot and ankle had been stung through the stocking so seriously that for days she could not wear a leather shoe. All this can be averted according to our experience, and that we believe of many others, by carbolic acid judiciously used. The safest plan is to keep a solution of the acid. The solution should not contain more than 6 or 7 per cent., and it may be added to water until the latter smells strongly. This may readily and with perfect safety, be applied with a sponge. We have no doubt that horses and cattle could be protected in the same way from the flies, which sometimes nearly madden them, and it even seems possible that that terrible scourge the African Tsetse fly, might be kept off in the same manner.—*Lancet*, June 25, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM AUGUST 2 TO AUGUST 8, 1887.

SUTHERLAND, CHARLES, *Colonel and Surgeon*.—Leave of absence extended one month.—*S. O. 174, A. G. O.*, July 29, 1887.

FRYER, B. E., *Major and Surgeon*.—Relieved from further duty at Fort Lowell, Arizona Territory.—*S. O. 176, A. G. O.*, August 1, 1887.

BROWN, HARVEY E., *Major and Surgeon*.—Relieved from duty in the Department of Missouri, and ordered to Jackson Barracks, La., for duty at that post.—*S. O. 174, A. G. O.*, July 29, 1887.

GARDINER, JOHN DE B. W., *Captain and Assistant Surgeon*.—Granted leave of absence for one year, on surgeon's certificate of disability.—*S. O. 177, A. G. O.*, August 2, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR TWO WEEKS ENDING AUGUST 6, 1887.

IRWIN, FAIRFAX, *Passed Assistant Surgeon*.—To inspect unserviceable property at New York Marine Hospital, August 5, 1887.

CARTER, H. R., *Passed Assistant Surgeon*.—Granted leave of absence for six days, August 1, 1887.

BEVAN, A. D., *Passed Assistant Surgeon*.—Granted leave of absence for ten days, August 5 1887.

NORMAN, SEATON, *Assistant Surgeon*.—Granted leave of absence for four days, on account of sickness, August 5, 1887.

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ORIGINAL ARTICLES.

SEWER-GAS POISONING.

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IN the houses of the present day containing all the modern improvements there is constant danger that the air from the soil pipes or drains will enter the house in consequence of defective plumbing; and that this danger is a very real one is shown by the frequency with which oil of peppermint, introduced into the drain of such a house, betrays itself by its odor in one or more of the rooms. Even a small leak in the soil-pipe, in consequence of the steady escape of sewer-gas, will suffice to contaminate a large air space, especially when the air is not rapidly changed —as, for instance, when the house is tightly shut up on a winter night.

Although it is a difficult thing to determine the exact cause of individual cases of disease, yet it is certainly a very widespread, if not a universal, belief in the medical profession that the escape of sewer-gas into a house may give rise to sickness. The mere fact that in a house with defective plumbing a certain form of disease occurs is, of course, no proof that the former is the cause of the latter. It may either be a mere coincidence, or the sewer-gas may predispose the system to, or even aggravate[1] the disease, without actually causing it. In order to make it probable that the defective plumbing, and the consequent escape of sewer-gas, is the cause of the disease, the two things must occur together many times, and the oftener that this concurrence takes place the stronger becomes the probability that there is a causal connection between them, and this probability becomes still stronger if, after the plumbing has been repaired, the disease more or less quickly disappears.[2]

The character of the sickness resulting from sewer-gas poisoning varies greatly, depending in part upon the different susceptibility to different diseases of the inmates of the house, and in greater part on the varying composition of the sewer-gas itself. An analysis of sewer-gas taken from well-ventilated sewers shows it to contain oxygen, nitrogen, carbonic acid, and ammonia in proportions not varying essentially from those of the atmosphere; and an analysis of sewer-gas taken from badly ventilated sewers (which is much more poisonous than that from well-ventilated ones) shows a diminution of oxygen, an increase of nitrogen, ammonia, and carbonic acid, and the presence of hydrogen sulphide, marsh-gas, and organic vapors of a carbo-ammoniacal composition. Large quantities of bacteria have also been found in sewer-gas.

Sewer-gas (which is merely a convenient name for the atmosphere of sewers) is, therefore, of a very complex and variable composition, and its toxic elements are not certainly known. In cases of acute asphyxia from very foul sewer-gas the symptoms so strongly resemble those of poisoning by hydrogen sulphide that this gas is probably the cause of such attacks; but it is very doubtful whether hydrogen sulphide is often present in a house in sufficient quantities to produce any poisonous effects. On the other hand, in cases of typhoid fever from sewer-gas poisoning the toxic element is doubtless the bacillus of typhoid fever, for which the sewer-gas acts merely as a vehicle, and it is probable that most of the cases of sewer-gas poisoning are due to pathogenic bacteria, which happen to be present in the sewer-gas, and are carried by it into the air of the house. It is probable that in all cases of sewer-gas poisoning the toxic element belongs in one or the other of the following classes:

1st. Pathogenic bacteria, which have already been isolated and studied, and may, therefore, be said to be "known."

2d. Pathogenic bacteria, which have not yet been isolated and studied, and are, therefore, "unknown."

3d. Poisonous gases, such as hydrogen sulphide.

The first two classes are by far the most important as a cause of disease, and in them the sewer-gas merely conveys the specific germs, which have got into it more or less accidentally, and which are not necessarily present in sewer-gas.

In the case of those diseases which are known to be caused by bacteria it is not difficult to understand that the bacteria entering the drain, and finding there food, moisture, warmth, and other requisites for growth, should propagate rapidly, and subsequently getting into the air of a house through a leak in the drain, might enter the body of some person, and might cause the diseases of which they are the etiological agents. Many cases have been reported which tend to prove more or less conclusively that typhoid fever, pneumonia, diphtheria, cholera, dysentery, cerebro-spinal meningitis, ery-

[1] Rigby: Parke's Hygiene, vol. 1, p. 148.

[2] It is true that there is often an escape of sewer-gas into a house without any sickness resulting from it, but it is to be remembered that not every one exposed to a contagion, or other cause of disease, contracts the disease. In this connection the investigations of Lassaer, Viertelj sch. f. öff. Gesundth. Pflege. 1881, 13, p. 341) are of interest, who found that in six out of ten houses in which there was an escape of sewer-gas there occurred one or more cases of disease which could be attributed to the sewer-gas, while in the other four houses there was no such disease; and that such diseases occurred in only sixteen per cent. of a considerable number of houses in regard to whose sanitary condition he was ignorant, as against the sixty per cent. in the houses in which here was known to be an escape of sewer-gas.

stipelas, and scarlet fever, can be caused by sewer-gas into [illegible]

But in addition to these diseases which are caused by a well-known specific germ, there are many other forms of disease (most of which are probably also of bacterial origin) which are generally regarded as being due to sewer-gas poisoning, and which, unfortunately, are sometimes classed under that much abused term "malaria," taken in its etymological and broadest sense, "bad air." Although in a general way numerous allusions have been made to this class of diseases, both in medical and in general literature, yet when one comes to study the subject, it is surprising how little the nature of the individual diseases of this class have been studied, and how impossible it is to say just what diseases can and cannot result from sewer-gas poisoning, and what group of symptoms in any case would lead one to suspect sewer-gas poisoning. During the past few years I have seen a number of cases of this class, which I would like to present to this Association. The time allowed for the reading of papers prevents my giving more than a brief summary of each case, and indeed the cases are so few in number, and some of them are so imperfectly studied that I cannot hope to offer any well-grounded conclusions, but only to bring up points for discussion, and to suggest the importance of an exhaustive study of the subject to those members who are better able than I to investigate it. It is certainly important to know to just what disease inmates of a house in which there is an escape of sewer gas are exposed, and this study is undertaken not with the idea of discovering the essential cause of any disease, but only to replace the general statements found in medical literature in regard to the diseases which may be caused by that very complex body, sewer-gas, by statements a little more definite, and to lay a foundation for future work on this subject. For convenience of study I have grouped the cases not according to the houses in which they occurred, but according to the symptoms which they presented.

The most generally recognized effect of sewer-gas poisoning is a disturbance in the functions of the alimentary canal, and, as illustrative cases of this group, I would report the following:

Case I.—Mr. E., æt. fifty-five, slept in a small room, with untrapped stationary wash-stand, and for ventilation opened a window on a small well in the centre of the house, in which well an untrapped gutter-pipe connecting directly with the sewer opened not three feet from the window. On pouring oil of peppermint into a distant part of the house-drain, the odor of peppermint filled this bedroom immediately. For five or six years, almost as long as he had lived in this house, Mr. E. vomited every morning as soon as he got out of bed, and presented no other symptom. The pipes were trapped, and the plumbing put in proper order, and the vomiting of Mr. E. stopped immediately; so that, in this case, the vomiting, and the vomiting only, seemed to be directly caused by the sewer-gas. The wife of Mr. E., who slept in this same room, died of sewer-gas poisoning (Case XVI.), and his son-in-law, who did not sleep in this same room, but whose room was ventilated by the same window in the little well, also presented symptoms of sewer-gas poisoning (Case XIX.).

Case II.—Mr. G., æt. forty-three, had been working very assiduously during two weeks in January, in a building in which the plumbing was full of defects; among other defects, sewer-gas had free access to the hot air which warmed the building. During the last week of his work in this building, and for a week afterward, Mr. G. had a severe diarrhœa, or rather purging, which came on every morning, and consisted of half a dozen or more copious watery discharges which exhausted him greatly, and then ceased, not to return till the same hour next morning. The diarrhœa finally yielded to quinia.

In these two cases the purging and vomiting occurred separately, and were not combined as they are usually, and as they were in the following cases:

Case III.—Mr. T., æt. twenty-eight. In the spring the drain under the kitchen was broken, and the contaminated earth was upturned in order to repair the break. Mr. T. went down to look at the work, and was attacked with vomiting, purging, loss of appetite, and great prostration, which lasted about a week, and ran its course without fever. The prostration lasted about two weeks.

Case IV.—Mr. H., æt. thirty-two. In the spring the drain under the basement was broken, and the contaminated earth was upturned in order to repair the break. Mr. H. examined the work several times, and before it was completed he was attacked by vomiting, loss of appetite, and violent purging, the stools being copious, watery, and of dark color. The purging continued about a week, and ran its course without fever. The prostration lasted about two weeks.

A Mr. P., who had charge of the repairs of this same drain, was attacked by a severe sore throat.[1]

[1] Cases somewhat similar to these first four, in which nausea, vomiting, purging, and prostration, were prominent symptoms, have been described by Foss (Medical Examiner, 1879, i, p. 47; Sixth Amer. Pub. Health Ass. Rep., 1879, p. 362), Eaton (Sani-

Enlenberg, in his book *Die Lehre von den Giftigen Gasen*, states that the symptoms of chronic poisoning by sewer-gas are nausea, vomiting, colic, weakness, and diarrhœa, or constipation.

Workmen engaged in cleaning out sewers which have become choked are often overcome by the very foul gases occurring in such sewers, and present a very acute and severe form of sewer-gas poisoning.

Such cases have been reported by Harbordt (*Berl. klin. Wochenschr.*, 1871, p. 289), Seifert and Macintosh (*Phil. Med. Bull.*, 1883, v. p. 148), and many others. These patients are usually in a condition of collapse, comatose, and have general convulsions; if recovery takes place, there usually remains for a considerable length of time a condition of physical and mental weakness. Enlenberg (loc. cit.) divides these cases into three classes: *First*, a mild form, of which the symptoms are nausea, vomiting, colic, weight in epigastrium, pressure on vertex, dyspnœa, rapid, and small pulse, great weakness, and, in some cases, delirium. *Second*, a condition of clonic and tonic spasm, together with faintness and unconsciousness. *Third*, a severe form, in which the patients become slowly or rapidly asphyxiated. Face is pale, lips cyanotic, breathing and pulse faint. As this condition of asphyxia passes off, convulsions appear. The unconsciousness may continue three or four days, and when it passes off the patient vomits and complains of pain in his head and limbs. There is a disgusting stink emitted from the body of such patients. Dr. Herbert Barker (*Malaria and Miasmata*, 1863) has approached this subject from an experimental standpoint. He found that dogs kept in a box which was supplied with air from a cesspool vomited and purged, and would not eat. They recovered rapidly when removed from the sewer-gas. After a short exposure to the gas there was only slight exhaustion, but after a long exposure there was fever, and a condition of feebleness lasting six weeks. Dogs exposed in the same way to hydrogen sulphide fell insensible, had rapid respiration and pulse, and violent heart-action, tremors, and convulsions. Unless the percentage of hydrogen sulphide in the air was very small, the dogs died; and, in any case, they only recovered slowly from the effects of their exposure to it.

In these four cases the sewer-gas poisoning caused only a temporary gastro-intestinal disturbance which was accompanied and followed by a prostration of short duration, but in the following case the subsequent prostration continued a long time.

CASE V.—Mr. P., æt. eighteen, was present when a very foul privy vault, which had been unused and covered up for many years, was opened. He was immediately seized with faintness, and with severe vomiting and purging. Afterward he was extremely prostrated, and for five or six years he was an invalid, unfit for any physical or mental effort. He was very weak, and appeared to be in a condition of general debility without presenting any evidence of organic disease.

tary Record, 1865–66, p. 525), C. Handfield Jones (Med. Times and Gazette, July, 1871, p. 9, 2d case), Finklenburg (Vierljsch. f. gerichtl. Med., 1874, N. F., 20, p. 301), Trend (Brit. Med. Journ., November, 1878, p. 719), and Morrill (Bost. Med. and Surg. Journ., December, 1884, p. 531).

The following case is interesting in many respects.

CASE VI.—Miss S., æt. forty. An iron ventilating pipe of light weight ran up in the wall of her bedroom from the drain to the roof. The joints of this pipe were found, on examination, to be open, and the peppermint test gave a strong odor of peppermint in the room. Miss S. had occupied this room less than a year when she had an attack of acute Bright's disease, œdema of lungs, and general œdema, vomiting, diarrhœa, etc., abundance of casts, and a large amount of albumen in the urine. She was taken to the hospital, and made a good recovery. After a few months she returned to this same room, and during the next ten years had no return of the Bright's disease, but suffered from frequent attacks of complete loss of appetite, great prostration and wretchedness, vomiting, diarrhœa, coated tongue, and headache. On several of these occasions the urine was examined, and was found to be free from albumen and casts. Each attack lasted from one to three weeks, and she had eight or nine such attacks each year. A year ago she had three severe attacks of facial erysipelas; she was scarcely over one attack a fortnight before she had another, and it was these attacks of erysipelas which led to an examination of the plumbing. The defective pipe was replaced by a thicker one properly leaded, and Miss S. has enjoyed good health ever since.

In this case the escaping sewer-gas caused a succession of attacks of gastro-intestinal catarrh during ten years, at the end of which time the specific micrococcus of erysipelas probably got into this particular drain, and escaping into the room caused the succession of attacks of erysipelas, and both these kinds of attacks promptly ceased when the leak in the pipe was stopped. The question naturally arises, whether the attack of acute Bright's disease with which this series of diseases commenced, was not also the result of sewer-gas poisoning. The following cases, it seems to me, make it extremely probable that this is so.

CASES VII. and VIII.—Dr. P., æt. sixty-five. Connected with the bedroom in which he and his wife sleep, is a little room in which there is a water-closet, which they never use in the winter time and only rarely in the summer; so that the closet is rarely flushed, and it is certain that the trap often dries out. The soil pipe of the water-closet runs to an hermetically sealed cesspool. At times a bad odor is noticed about this closet. In the early part of the winter his wife was attacked by a low form of fever, which was followed by an attack of acute Bright's disease (general œdema, albumen and casts in the urine) from which she completely recovered. During his wife's illness Dr. P. began to complain of general weakness, numbness of extremities, dyspnœa, palpitation, insomnia, pain in the occiput, failing eyesight, and confusion of mind. These symptoms have continued up to the present time. Micturition is frequent. Urine is abundant and contains a small amount of albumen and many finely granular casts of small calibre. Otherwise physical examination is negative except for a high arterial tension.

The occurrence of Bright's disease almost simultaneously in the wife and husband, makes it probable that there is some local cause for the disease, and taken in connection with the case of Miss S., renders it very probable that this local cause is sewer-gas, and this probability is strengthened by the seven cases which follow.

CASES IX. and X.—Mr. K., æt. sixty-eight. Connected with his bedroom was a bath-room, the plumbing

of which was in very bad condition, allowing a free escape of sewer-gas; and under the basement floor the house-drain was broken and a large pool of sewage had gradually formed, into which a workman, who unsuspectingly walked over it, sank to his knees. Mr. K. came to the office on May 8th, complaining of great weakness, dyspnœa on exertion, and looked haggard and miserable. At that time his urine contained no albumen. He grew rapidly worse, and the next night his dyspnœa became orthopnœa, he had complete anorexia, he developed general œdema and œdema of the lungs, and his urine became scanty and contained a large quantity of albumen together with hyaline and granular casts. On May 17th he became delirious, then comatose, and died on May 20th, twelve days after he first came to the office for medical advice. His wife soon afterward began to present the same symptoms: dyspnœa, prostration, haggard face, etc. It was then suspected that the plumbing was in bad order, and an examination revealed the condition of things described above. Mrs. K. was removed to a room entirely unconnected with the plumbing, and made a rapid and complete recovery.

Case XI.—Mrs. G., æt. fifty-six. In March she had an attack of indigestion, at which time her urine was examined and found to contain no albumen. On the following May she moved into another house, and after that time she did not feel well, and about the middle of July an attack of acute Bright's disease was ushered in by a chill, vomiting, and diarrhœa. The urine contained one eighth per cent. of albumen and numerous hyaline and finely granular casts of small calibre. During the first few days of her sickness she had numerous chills and a low form of fever, the temperature not rising above 101°; and during the whole sickness she was extremely prostrated, so that she could not raise herself up in bed; she also had absolute anorexia and a profuse diarrhœa. An examination of the house revealed numerous leaks in the soil pipes, one hole being two inches square, through which there was a free escape of sewer-gas. The plumbing was repaired, and as soon as it was possible, Mrs. G. was removed to another house. The albumen had disappeared from the urine by the end of July, and on August 20th she was able to walk out on the street, although she did not recover her strength for several months.

Case XII.—Mr. C., æt. sixty, as a contractor worked for a long time at a very foul sewer. Before he had finished working at it he was seized with weakness, dyspnœa, and œdema, and an examination of his urine showed one-sixth per cent. of albumen, and numerous hyaline and granular casts. He continued to present the symptoms of chronic Bright's disease, and died after a sickness of less than a year, from uræmic poisoning.

Case XIII.—Mr. H., æt. seventy-five. About a year and a half ago he moved his office, where he worked more than ten hours a day, to a room which was heated by hot air, which was contaminated by sewer-gas, so that when the room was shut up for a few days the air became extremely offensive. At the time of moving into this office Mr. H. was an unusually vigorous man for his age. A month or two later he began to be troubled by diarrhœa and frequent micturition. To these symptoms were added dyspnœa, palpitation, sweating, frontal headache, and failing eyesight. The dyspnœa then became orthopnœa and œdema of the legs appeared. The pulse was quick, irregular, and intermittent. The heart's action was violent and irregular; the area of cardiac dulness was increased, but no murmurs could be heard. The urine contained one-eighth per cent. of albumen, and a few hyaline casts. Mr. H. is still living. He has ascites and much œdema, and a very irregular and labored action of the heart.

Case XIV.—Mr. X., æt. fifty-five, went to work in an office in which there was a stationary washstand, the soil-pipe of which was untrapped and allowed a free escape of sewer-gas. The previous occupant of this office died, and his death certificate reads fatty degeneration of the heart, although he was said to have had Bright's disease also. Mr. X. soon after commencing work in this office began to be troubled by dyspnœa on exertion, headache, and general weakness. The dyspnœa and weakness became extreme, and about a year after commencing work in this office he was suddenly seized with a right-sided hemiplegia, followed in a few hours by coma of short duration. At that time the urine was examined and found to contain one-sixth per cent. of albumen, and hyaline and finely granular casts. The pulse was irregular and intermittent; the heart's action violent and labored; area of cardiac dulness was increased; no murmurs; arterial tension high. He left his office and travelled about and improved slowly and steadily. His urine was last examined six months ago, at which time it still contained albumen and casts. His heart's action continued labored and he was feeble. Since that time he has continued to improve in strength.

Case XV.—Mr. S., æt. fifty. In the cellar of his store, in which he spent most of his time, there was a large opening into the drain. In the middle of the winter he began to be troubled by dyspnœa and general weakness. Pulse was rapid and feeble; heart's action extremely labored; urine contained a large amount of albumen (¼ per cent.) and hyaline and finely granular casts. He developed ascites and general œdema, and a secondary pleuritis and pericarditis, and finally died from exhaustion.

The last ten cases make it very probable that one of the effects of chronic sewer-gas poisoning is some form of nephritis. In the absence of autopsies, the nature of the renal lesion cannot be determined. In all the cases there were diarrhœa and extreme prostration. In almost all of the cases the quantity of albumen in the urine was rather small, and in the case of Mr. K. (Case IX.), when he first presented the symptoms of dyspnœa and prostration, albumen was absent from the urine and did not appear till several days later;[1] so that it seems in these cases as though the symptoms can hardly be altogether explained by the nephritis, but rather that the change in the kidneys is only one manifestation of a general infection of the body by the poison of the sewer-gas.

In the last three cases there wa a very labored action of the heart; a greater degree of cardiac disturbance even than is usually met with in Bright's disease; so that it is a question whether the poison of sewer-gas does not cause a degeneration of the heart's substance as well as of that of the kidney.[2] That this is not improbable, appears from the following case, in which, in addition to the general prostration, the heart seems to have been especially

[1] In this connection compare the first case reported by C. Handfield Jones (Medical Times and Gazette, July, 1871, p. 9).

[2] I have seen a number of cases, each one of which is too imperfect to report, but which taken collectively, lead me to believe that there is a form of disease, rather difficult of exact diagnosis, which presents the symptoms of prostration, emaciation, anæmia, anorexia, œdema, dyspnœa, and diarrhœa, and the physical signs of a weak heart, often, but not always, associated with a small amount of albumen and sometimes with casts in the urine, and occasionally with œdema of the lungs, and which is due to sewer-gas poisoning. Recovery usually takes place in these cases when the patient is removed from the sewer-gas infection.

involved, although there is no evidence of any renal lesion.

Case XVI.—Mrs. E., æt. forty-eight. The very unsanitary condition of her bed-room (which was not discovered till just before her death) was described in reporting the case of her husband (Case I.) who for years vomited every morning. Mrs. E., who had previously been a strong, healthy woman, occupied this room for seven years, during the whole of which time she felt weak, miserable, and nervous. Her principal symptoms during these years were great weakness and nervousness, loss of appetite, dyspnœa, palpitation, and vomiting, (occasionally there was bloody vomitus at the time of menstruation, but only when menstruation was imperfect). She grew steadily weaker, so that during the last month of her life she could scarcely walk across the room, and her stomach was so irritable that she vomited almost all her food. She was anæmic and fleshy, but her flesh was soft and flabby. Pulse was small, 110. Heart's action irregular and labored. Great enlargement of the liver and of the spleen, apparently the result of passive congestion. Her urine was examined several times, and was found to contain neither albumen nor casts. Her pulse became more and more rapid; being 120 a fortnight before she died, and during the last week of her life was too rapid and irregular to be counted. Toward the end of her illness she had several attacks of precordial pain, and on the last day of her life she had two severe attacks of angina pectoris, which were relieved by hot applications and inhalations of nitrite of amyl. Soon after the last attack she became comatose and died in a few hours. No autopsy was allowed.

A common effect of sewer-gas poisoning is a condition of general weakness, and I am inclined to think that some cases of nervous prostration are due to this cause.[1] Indeed, weakness, irritability, loss of appetite, dull headache, and drowsiness are a group of symptoms which play a principal part in almost every form of disease due to sewer-gas poisoning; but there are some cases, such as the following, in which these symptoms are alone present and constitute the entire disease.[2]

Case XVII.—Mrs. K., æt. fifty-five. The cold air box of the furnace in her house was connected indirectly with the drain. For several years she has suffered in the winter time from loss of appetite, diarrhœa, vertigo, drowsiness, and great prostration. She was tired out on slight exertion, was greatly depressed, and every duty seemed a mountain in her path. She continued to grow weaker until she could scarcely walk. Her temperature was normal. Pulse 110. The urine was free from albumen. Although scarcely able to be out of bed she was sent south and improved rapidly. In her absence the house was put in good sanitary condition, and after her return she continued to improve, and is now well.

XVIII.—Mrs. V., æt. sixty. The plumbing in her house was old, and was in very bad condition; there being a number of leaks in the soil pipes. During the winter she has frequently had attacks of chilliness. In April she began to feel very weak and miserable, had no appetite, complained of dull headache and of great drowsiness, she was much depressed and did not feel able to accomplish anything. At the same time that Mrs. V. suffered in this way her daughter became feverish and had a typical attack of typhoid fever. A servant in the house had a succession of sore throats and headaches during the whole winter. Mrs. V. went away from her house while it was being repaired and gradually regained her health and strength.

Case XIX.—Mr. T., æt. twenty-six, lived for a short time in the house, the unsanitary condition of which was described under Case I. During the whole time that he was living in this house he felt weak and wretched, had a dull headache, no appetite, and was drowsy. He recovered very soon after leaving the house.

In all of these cases of general weakness the patients have complained of great drowsiness, and this, in my experience, is one of the first and most constant symptoms of sewer-gas poisoning. In the following case it was the only symptom.

Case XX.—Mrs. F., æt. sixty, in consequence of anxiety and worry got into a condition of great nervous exhaustion, and was greatly troubled by insomnia. In the midst of this condition she moved into a house, the plumbing of which was found to be in a very defective condition, allowing the escape of sewer gas in all parts. As soon as this was discovered she was taken to another house, but during the five days that she remained in the house with defective plumbing, her obstinate insomnia disappeared and she slept not only during the night but also during most of the day. When she left this house, however, her insomnia returned.

Chronic sewer-gas poisoning often manifests itself in an irregular low form of fever either with or without chills, as is seen in the following cases.[1]

Case XXI.—Mr. M., æt. sixty-seven, had locomotor ataxia for several years and had been pretty closely confined to his sitting-room and bed-room, both of which were on the same floor, and between them with doors always wide open, was an old-fashioned pan closet, which was found by the peppermint test to leak badly, and on examination the cement was found to have fallen away from the joint of the soil pipe leaving a large opening. Mr. M. was suddenly seized with a severe chill followed by fever and by a delirious semi-comatose state. During the next week he had frequent chills followed by high fever and sweating. He was frequently comatose during and after the chills, and was much of the time delirious. The chills occurred once or twice a day at no regular hour, usually in the morning, and occasionally in the afternoon also. The leak in the water closet was then discovered. It was found impossible to remove him effectually from the sewer-gas infection, but he was moved into a hall bed-room and the water closet door was kept shut, with the result, that he had one slight chill on the day that he was moved but no more, and the temperature fell to 99½° the next day and was afterward normal. He continued to have absolute anorexia, grew steadily weaker and finally died from exhaustion.

Case XXII.—Dr. H., æt. thirty-one. On February 7th he did not feel well and had no appetite, and in the evening his temperature was 102°. He did not feel well during the next week, but his temperature continued normal till the evening of February 13th, when it was again 102°. He then began to be troubled by a severe dry cough, his appetite continued poor, but his

[1] Compare Morrill (Boston Med. and Surg. Journ., Dec. 1884, p. 531).

[2] Compare Eaton (Sanitary Record, 1885-6, p. 595) and Cosgrave (Trans. Acad. Med. Ireland, 1885, p. 365, Case 101).

[1] Compare Burrall (N. Y. Hosp. Gazette, 1879, p. 662), Nourse (Sanitary Record, October, 1880, p. 127), Trask (N. Y. Medical Record, October 16, 1875), and Noel (Am. Health Ass. Reports, 1876, p. 362).

temperature continued normal till the evening of February 19th (another interval of just six days), when it was 103°. After that time the temperature continued elevated; being a little above normal in the morning and rising to 102° or 103° in the evening. On February 21st he discovered a very bad break in the drain beneath the kitchen floor; the ceiling of the kitchen was broken and above it was his bedroom with a poor floor, thus allowing the foul air an easy access to his bedroom. The break in the drain was repaired as soon as possible. On the 24th, 25th, and 26th he had slight epistaxis, bowels were rather constipated, the dry troublesome cough continued. On February 27th the temperature was A.M. 99°, P.M. 104°. On the 28th A.M. 101°, P.M. 100¾°. On March 1st, A.M. 99½°, P.M. 99½°. After this the temperature remained normal, his appetite slowly returned, and he gradually recovered the flesh which he had lost.

Such cases of fever have been frequently reported. The epistaxis and the dry troublesome cough recall typhoid fever.

CASE XXIII.—Mr. P., æt. thirty-four. In an alcove off from his bedroom is a stationary washstand, in which there was a leak, and consequent escape of sewer-gas. He was attacked by pain in his head and back, loss of appetite, and great prostration. He had a low form of fever for two weeks, the temperature being 101 every night with great regularity, and between 99½° and 100 each morning. After two weeks of this low form of fever, the temperature commenced to rise, and the spleen commenced to enlarge, although it was not so before. At the same time diarrhœa commenced, and there were tenderness and gurgling in the right iliac fossa; a couple of days later he had an epistaxis, and about a week later rose spots appeared. In other words, after a low form of fever continuing for two weeks, an attack of typhoid fever commenced with all the typical symptoms, which then appeared for the first time. The typhoid fever ran a perfectly regular course, and lasted three weeks. In this case, then, the sewer-gas poisoning produced a low form of fever, during the course of which the system became infected with the typhoid fever germ, probably also from the sewer-gas.

Under Cases IV. and XVIII. sore throats have been mentioned as occurring in houses at the same time with other forms of disease due to sewer-gas poisoning, and cases of sore throat have often been reported as being due to sewer-gas poisoning.[1] In many of these cases the sore throat has a diphtheritic character, as in the following case:

CASE XXIV.—Mrs. C., æt. sixty, lives in a house in which, within two months, there have been a case of pneumonia, a case of erysipelas, and a case of measles in the adult. Beneath the basement floor there is a bad break in the drain. One evening the stench from this drain was very offensive, and Mrs. C., who was sitting in the basement, was seized with a chill, headache, and sore throat. That night she was feverish, and the next morning there was a compact, oval patch of white membrane on each tonsil, measuring about a half by a quarter of an inch in its long and short diameters respectively. In thirty-six hours these patches fell off, leaving quite deep ulcers, which slowly healed. There was no enlargement of the cervical glands. The throat was sore, and deglutition was painful. Pulse varied from 80 to 90. Temperature was 100½° in the morning and 102° in the evening. On the fourth day of the disease the fever left her, and she felt in every way so much better that, although still very weak, she considered the disease as over, as indeed it was, although she continued greatly prostrated for several weeks.

Such cases as these may be considered either as mild forms of diphtheria, which they probably are, or they may be considered as necrotic tonsillitis, following the classification in *Strümpell's Text-book of Medicine*.

Not infrequently sewer-gas poisoning shows itself in disease of the nervous system. The most common of these diseases thus produced is neuralgia, as can be seen from the following cases[1]:

CASE XXV.—Mrs. L., æt. thirty, slept in a middle room opening out of a bath-room. An examination of the plumbing showed that it was very old, and leaked in almost all parts, the bath-room being particularly defective. During five or six weeks she suffered from intense neuralgic pains, which commenced in the lumbar region and extended around into the groin and down the posterior and other outer surfaces of the thighs and legs. These pains recurred daily, and were so intense as not only to require morphia hypodermatically, but they reduced the patient to a very low and precarious condition. She was also extremely weak, and had no appetite. When the trouble with the drain was discovered, she was moved to another house. After she was taken to the other house there was no return of the pain, her appetite returned, and she quickly regained her strength. There could hardly be a more striking example of neuralgia due to sewer-gas poisoning than this one.

CASE XXVI.—Mrs. T., æt. thirty-two, lives in a house in which the plumbing was found to be in an extremely defective condition. In the latter part of December she had an attack of fever, lasting three days, the evening temperature being 103.8° on one night and 103° on another. Even after the fever left her she continued to be weak, and to have no appetite. On the first of January she was attacked with severe neuralgia of the ninth right intercostal nerve, which continued till the third week of January, when she went out of town. Early in February she returned to her house, and on the second day the pain returned, and was accompanied by a slight attack of jaundice. She then moved into another house, and in a couple of days her neuralgia ceased, and in a week the jaundice disappeared also.[2]

There is another form of nervous disease which I am inclined to think may also be caused by sewer-gas, and that is myelitis of the anterior horns, which is probably an infectious disease.

CASE XXVII.—Mr. B., æt. twenty-nine, worked in a little wooden shed built on the very edge of the Albany Basin, and just over the outlet of one of the principal city sewers. The stench at times was so bad that the clerks had to relieve each other frequently, and go up the street for a little fresh air. He worked in this place, from May till October, for three summers. During the third summer he noticed that he was very drowsy during the day, although somewhat restless at night, and that his appetite was very bad. On the first of September,

[1] Compare Carden (Brit. Med. Journ., March, 1884, p. 600), Davis (Sanitary Record, March, 1883, p. 401), Brown (Brit. Med. Journ., March, 1876, p. 340), Morrill (Boston Med. and Surg. Journ., December, 1884, p. 531), and Nourse (Sanitary Record, October, 1880, p. 127).

[1] Compare Morrill (Boston Med. and Surg. Journ., December, 1884, p. 531).

[2] Jaundice has been noticed in cases of sewer-gas poisoning, by C. Handfield Jones (Med. Times and Gazette, July, 1879, p. 9) and by Burrall (N. Y. Hosp. Gazette, 1879, 7, p. 662).

1880, at 5 P.M., his legs suddenly gave way under him, and he fell. He managed to walk home, and to creep upstairs on his hands and knees. The next day he could move his arms and legs a little, but inside of three days he lost completely all power of voluntary movement, except that he could masticate his food pretty well; for a short time he was unable to close his eyes. There was no disturbance of sensibility, but a complete loss of all the reflexes: superficial, deep, and organic. He went through a typical attack of myelitis of the anterior horns, with great muscular atrophy, and the electrical reaction of degeneration. At the end of a year he could get about on crutches, and in about two years and a half he could walk without a cane. Even at the present time, seven years after his attack, he is emaciated and weak.

Case XXVIII.—Mr. B., æt. forty-two, was obliged to inspect for several weeks a sewer which was being repaired, and which emitted a very bad stench. In the course of this inspection he was attacked by a chill followed by fever, and during three weeks he had a low continued fever, with frequent chills. After the fever ceased he did not regain his health, but during the next year steadily lost flesh and strength, his appetite became poor, he had neuralgic pains in various parts of the body, and his health failed in every way. His urine was free from albumen and casts. At the end of a year his legs suddenly gave way under him, and he fell several times in the street. He then developed a well-marked case of myelitis of the anterior horns, from which, after several years, he made a complete recovery, and is now in good health.

Finally, I will report a case in which the diagnosis as to the nature of the disease is doubtful, but which seems to be an undoubted case of sewer-gas poisoning.

Case XXIX.—J. L., æt. six and a half, slept in a middle bedroom, with connecting bath-room, in a house in which there was a free escape of sewer-gas, especially in this bath-room. The sanitary condition of the house was described under the case of his mother (Case XXV.), who presented a well-marked case of severe neuralgia, due to sewer-gas poisoning. His grandmother, who had lived in the same house, suffered from great prostration and an obstinate bronchitis,[1] both of which quickly disappeared when she moved to another house. I saw the boy in consultation once only. He had, for a week or more, such a severe frontal headache, probably of a neuralgic character, as to suggest the possibility of cerebral disease; but no other cerebral symptoms could then be discovered. His tongue was coated, pulse was rapid, there was decided enlargement of the spleen, and his urine contained albumen. During the first two weeks of his sickness he had a fever ranging from 99° in the morning to between 100° and 101° in the evening. He became extremely emaciated. About a week before his death there was, during several days, a partial suppression of urine. Cheyne-Stokes respiration appeared, he gradually sank, and, without any expression of pain on his face, he died, a little less than three weeks after the commencement of his sickness. No autopsy was allowed.

In all of these twenty-nine cases there was an escape of a large amount of sewer-gas into the air which the patient breathed, and at the time that each case was observed it seemed extremely probable that the sewer-gas was the cause of the disease. I have notes of a number of other cases of this class, but as they are not in all respects convincing, I have not reported them; and I would only say that it seems to me that phthisis, and also diabetes mellitus, may sometimes have their origin in sewer-gas poisoning.[1]

From a consideration of these twenty-nine cases, we may conclude that it is probable that the following conditions may result from sewer-gas poisoning:

1st. Vomiting and purging, either separately or combined.

2d. A form of nephritis.

3d. General debility, in some cases of which the heart is especially involved.

4th. Fever, which is frequently accompanied by chills.

5th. Sore throat, which is frequently of a diphtheritic character.

6th. Neuralgia.

7th. Perhaps, also, myelitis of the anterior horns.

These conditions may occur separately, but are frequently combined, and it is especially common for the fever to be associated with the other forms of sewer-gas poisoning.

Finally, in cases of sewer-gas poisoning there is one group of symptoms which is almost always prominent, and these symptoms are: loss of appetite, drowsiness, extreme prostration, and a dull, unpleasant feeling in the head; and whenever this group of symptoms occurs, not as the result of an attack of acute disease, but as a chronic condition, we are justified in suspecting that the patient is exposed to sewer-gas infection.

If we summarize the cases of sewer-gas poisoning which are scattered through medical literature, and which have been mentioned in the notes to this paper, we find that more or less satisfactory evidence has been adduced that the following diseases may result from sewer-gas poisoning:

8th. Zymotic diseases, such as: typhoid fever, pneumonia, diphtheria, cholera, dysentery, cerebro-spinal meningitis, erysipelas, and scarlet fever (in these cases undoubtedly the sewer-gas merely acts as a vehicle for the specific germ).

9th. A condition of asphyxia, which, in its severe form, is characterized by coma, convulsions, and collapse.

10th. Puerperal fever.

11th. Abscesses.

12th. Lymphadenitis.

13th. Acute aural catarrh (?).

[1] In regard to bronchitis due to sewer-gas poisoning, compare Nourse (Sanitary Record, October, 1880, p. 127), and Ward (Sanitary Record, 1880–81, N. S., 2, p. 411).

[1] In addition to the numerous reported cases of disease due to sewer-gas poisoning mentioned in the notes to this paper, there are some other forms of disease which it is claimed are due to sewer-gas poisoning. Thus, Playfair (Lancet, February, 1887, p. 251), Cosgrave (Trans. Acad. Med. Ireland, 1885, 3, p. 365), Brown (Brit. Med. Journ., March, 1879, p. 346), and Trask (N. Y. Med. Record, October 16, 1875), think that puerperal fever may be due to this cause; while Brown (loc. cit.), Owen (Lancet, 1878, 2, p. 172), Cheadle (Lancet, August 17, 1878), and Noel (Am. Pub. Health Ass. Rep., 1876, p. 362), think that abscesses and enlarged and suppurating lymphatic glands may be due to sewer-gas poisoning; and Cassells (Edinburgh Med. Journ., 1878, 18, p. 910) thinks that acute aural catarrh may be due to the same cause.

SOME CLINICAL OBSERVATIONS ON THE EFFECTS OF THE LATEST FEBRIFUGE, ACETPHENETIDINE.

BY THOMAS J. MAYS, M.D.,
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THE latest febrifuge has been brought to the notice of the profession in the *Centralblatt für die medicinische Wissenschaften* of February 26, 1887, by Messrs. O. Hinsberg and A. Kast, under the name of acetphenetidine.

According to the *Pharmaceutical Record* (May 1, 1887), they obtained it from carbolic acid by the process of nitriting, separation of the arthro- and para-nitrophenols, acetylating the latter, reducing the *p*-nitrophenol to *p*-amedophenol, which is called phenetidin, and acetylating the phenetidin with glacial acetic acid, making the final product, acetphenetidine. It crystallizes in colorless needles, is slightly soluble in water, but dissolves in alcohol, and in glacial acetic acid. It is tasteless, and melts at 135° Celsius.

Their experiments on dogs with this agent showed that it was only in very large doses—from 45 to 75 grains—that it produced toxic symptoms. These consisted in accelerated respiration, somnolency, giddiness, vomiting, and cyanosis; and after having fully convinced themselves of its harmlessness in doses of from 15 to 30 grains per day, they essayed to test its action on fever in the human body. They gave it in the pyrexia of phthisis pulmonalis, in doses of from 45 grains to 2 drachms, three times a day, and found that it gradually lowered the temperature without producing any untoward effects whatever. Its action is said not to be accompanied by any sudden dissipation of heat, or by any profuse hydrosis.

Shortly after the announcement of these results appeared, I had the pleasure of receiving a small amount of the drug through the kindness of Mr. Merck, with which I made a few observations in its relation to the fever temperature of pulmonary phthisis. The agent yielded some good results, but on account of the limited amount at my command, the test extended only over a few days, a period too short to arrive at any definite conclusion concerning the utility of the drug. The first was an acute case of phthisis, with an afternoon temperature of 105½° Fahrenheit, which was preceded by a chill. I gave her three grains of acetphenetidine every three hours. She had another chill the next day, and her afternoon temperature was 104°. The third day her temperature had sunk to 101° P.M., and she had no chill that day. The fourth day she had another chill, but her temperature only rose to 101½° P.M. The fifth day her temperature was down to 98°. Discontinued the acetphenetidine. On the sixth day she had no chill, but her temperature rose to 101° P.M. On the seventh day she had a chill, and her temperature rose to 103⅘° P.M. Began the acetphenetidine again. Ninth day, temperature 100⅘° P.M. Tenth day, 100⅗° P.M. At this point the supply became exhausted, but from even this limited experience with the drug it was quite obvious that it had a marked influence in depressing the temperature. Besides this, her cough, appetite, and general condition seemed to mend.

The other was an old cavity case, with a temperature of 102° Fahrenheit P.M. He was given the same dose. Temperature, second day, 101⅖°. Third and fourth days, same. Fifth day, 100° P.M. This patient's expectoration and cough also seemed to improve while he was taking the medicine.

It is slower in its action than antipyrine or antifebrine, but probably on the whole safer. In order to obtain its best effects I think it should be given in a large dose at the outset, and then followed up with further doses in accordance with the demand of the supervening symptoms. It is worthy of investigation, and I shall give it a further trial in the near future.

THE PROGNOSIS OF CERTAIN HEART MURMURS,

WITH SPECIAL REFERENCE TO THE SELECTION OF RISKS FOR LIFE INSURANCE.[1]

BY FRANK DONALDSON, JR., B.A., M.D.,
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THE great importance of the prognosis in any given case of cardiac disease is, I venture to assert, not sufficiently emphasized by the average practitioner. There has always been a strong tendency to overestimate the importance of heart murmurs in themselves (heart disease in general), and to take too grave and sombre a view of them, without considering their position, or the symptoms associated or not associated with them. Of late years, however, especially among those skilled in auscultation, there has been a decided change of opinion, and the hopelessness which was once attached to the presence of organic disease of the heart no longer obtains. The discovery of a murmur is not now regarded as an infallible indication of unavoidable and early death. We now recognize the numerous forms of disease to which this organ is subject; we discriminate one affection from another, and we distinguish between what are conditions of passing debility and anæmia, and those graver ones of dilatation, valvulitis, and fatty degeneration.

Indeed, it may not be too broad a statement, that since the introduction of that most wonderful heart drug, *strophanthus*, even these severer forms of disease have much less terror for the physician, and that with this agent for good in our possession, the chances of a favorable prognosis are a hundred fold increased.

Again, this shifting of opinion as to the fatality of cardiac murmurs is beginning to work an important change in the selection of risks for life insurance in this country, as it has already done in England, where valvular disease, as such, is no longer a cause for total rejection, and where increasing attention is given to the signs of dilatation and displacement of the heart and to deficiency in the general circulation; the really risky cases are excluded,

[1] Address delivered before the State Medical Society of West Virginia, July 14, 1887.

and the persons selected for insurance who seem to have as good a prospect of prolonged life as those who are passed as "good" or "fair" risks—in other words, the risks are graded—such cases being insured at a higher premium.

As an examiner for a number of large companies I have given the subject considerable attention, *and it has been my practice for at least two years, in cases where there was a systolic basic murmur (aortic or pulmonary), or a slight mitral murmur, with no history of rheumatism, gout, or syphilis, and with no secondary symptoms, to postpone the risk.* I have, as I say, followed this rule in a number of cases, and have had the satisfaction of seeing the murmur disappear and the person get his insurance, of which it would have been so unjust to deprive him and his family. I am fully aware that the position I am taking will be criticised by the more conservative medical directors and examiners; but this is a question which undoubtedly needs to be brought forcibly before the medical profession, and especially before examiners of life companies. The majority of medical examiners, I am inclined to believe, rarely *locate* the murmur in any given case, and more rarely consider its significance — whether there may not be good grounds for postponement of the risk. Only the other day, in talking to a medical examiner of many years' standing, and an exceptional diagnostician, he said, "Well, really, this is something I never considered in all these years; if I heard a murmur in any situation I turned the risk down, and that ended it." I could not but tell him he had in that case done many people grave injustice.

This by way of introduction. I desire first to give brief consideration to the latest views as to the prognosis of certain organic murmurs, and, secondly, to the significance of the so-called functional murmurs, their situation and causation.

I. Prognosis of Organic Murmurs.

The elements of prognosis in heart disease are complex, but not necessarily complicated. To prognosticate the course and issue of any given case we must find—

1. The valve affected, and the relative danger attaching to the particular lesion.

2. The actual condition of the orifice and valve, and the degree of obstruction or amount of regurgitation to which the lesion has given rise.

3. The nature and tendency of the morbid change in the valve, whether stationary or progressive.

4. The condition of the muscular tissue of the heart, and how far compensatory changes may be counted on.

5. The mode of life of the patient.[1]

The relative frequency of the different forms of valvular disease of the heart is mitral regurgitation, aortic constriction; aortic regurgitation, mitral constriction; tricuspid regurgitation, pulmonary constriction; pulmonary regurgitation, tricuspid constriction.

In this paper I shall not consider diseases of the right heart. In order of relative danger diseases of the left heart may be placed in the following order: Mitral stenosis, aortic regurgitation; mitral regurgitation, aortic stenosis; though the latter is the most fatal when it is developed late in life, when it is progressive in character, and when compensatory hypertrophy is with difficulty established.

The actual condition of the orifice or valve is next to be ascertained, in which our chief guide is the murmur; but it must be remembered that a loud murmur may be produced by very slight change, while a scarcely audible murmur may be indicative of extensive destruction. A loud murmur is, on the whole, of less serious import than one which is weak and soft. The former is indicative of the force of the heart, at least. A long murmur, except in cases of mitral or aortic stenosis, is usually indicative of early and comparatively slight disease and of efficient action of the heart. A short murmur, on the other hand, says Broadbent, is sometimes significant of impending danger. The roughness or smoothness of a murmur *may be* of diagnostic significance. An accent at the beginning of a murmur shows that the valves still act as a check to the influx of blood. A post-systolic or diastolic murmur means that the valves come together accurately at first, but not afterward.

The pulse may be a source of considerable information. In aortic obstruction it is long, and the initial wave slight. In aortic regurgitation we find, of course, the typical "Corrigan's pulse." In mitral stenosis the pulse is small, but regular; in mitral regurgitation (when considerable) the pulse is small and very irregular.[1]

Hypertrophy and dilatation are too often looked upon as caused by the valvular disease *alone*, and as a measure of its extent. While this is to a great extent true, no direct ratio constantly holds between the amount of hypertrophy and of valvular obstruction, which would seem to show that there is something beyond the mechanical which contributes its quota of causation.

The connection between the valvular disease and hypertrophy or dilatation is dependent upon several considerations:

1. Different affections of the valves have greater or less tendency to the production of structural alterations.

2. The time of life at which the lesion takes place is of great importance.

A valvular lesion established in youth, for instance, will probably, by reason of the great hypertrophy give little trouble for many years at least.

After middle age, on the other hand, it would prove fatal before hypertrophy could be accomplished.

Again, the mode of life of the person will greatly influence the development of hypertrophy. Moreover, valvular disease accompanied by structural change in the heart is of more serious import than when not accompanied by it. For instance, in aortic constriction there must either be increase in

[1] Broadbent.

[1] Probably due to the increase of blood pressure in the auricle. See Foster's Journal of Physiology, vol. iii., 1882: "The effect of variations of intracardiac pressure upon the vagus nerve." H. Sewall and F. Donaldson, Jr.

the propulsive power of the heart or *diminished arterial tension*. Increased power, however, can be gained only by hypertrophy, and a direct aortic murmur accompanied by hypertrophy is of more serious import than one not accompanied by it.

In aortic insufficiency a certain amount of blood returns to the ventricle at each systole. To compensate for this the capacity of the ventricle must be enlarged; which is exactly what happens in this lesion. Dilatation, then, in such a case is totally distinct from that following structural weakness of the heart walls. For in the former case hypertrophy takes place and prolongs life; in the latter, no such saving process is brought about.

Another important factor influencing prognosis in heart disease is the *stationary* or *progressive* character of the lesion. For instance, congenital malformation of the valves would be stationary, and valvular lesions from acute endocarditis are also for the most part stationary, except when the inflammatory process has caused a mitral stenosis. Disease from chronic endocarditis and degenerative changes in later life, and due to gout and renal disease, is, on the other hand, progressive.

Again, dilatation of the orifice may derange the functional efficiency of a valve which itself has undergone no alteration. This is common with the mitral valve, and may occur at any time of life, induced by acute disease or by debilitating influences such as anæmia, chlorosis, etc.

The distinction, says Dr. Broadbent, which it is usually most important to make is between the lesions originating in acute endocarditis, which are probably secondary, and the lesions produced by chronic inflammatory or degenerative changes, which are inevitably progressive.

So much for the prognostic significance furnished by the heart itself. The other chief conditions which influence the future of a case of heart disease are:

Age. Valvular disease appears to be more serious in early childhood than a few years later; the weakened heart cannot keep pace with the active growth at this age.

Sex. It is somewhat remarkable that mitral stenosis is more common in women than men. In 53 cases seen by Broadbent, 38 were females, 15 males. Personally, I have never seen a case in man. Aortic insufficiency, however, is more frequent in man. Girls with valvular disease are more likely to break down at puberty than boys.

The mode of life of the patient, and the tension of the arteries, have a considerable bearing upon prognosis in any given case.

Such being the prognostic indications in heart disease generally, let us consider the prognosis in—

1. *Aortic Stenosis.* The supposed frequency of aortic stenosis is chiefly due to the fact that all those cases in which a systolic aortic murmur is heard are classed as cases of true stenosis, when in reality in only a small proportion of such cases does this condition actually exist. The various conditions under which an aortic systolic murmur may exist will be considered later. In a given case, however, where we have an obstruction to the flow of the blood we find considerable hypertrophy; and if this be due to the narrowed valves, the aortic second sound will be indistinct. If, however, the sound is accentuated, the hypertrophy is due to renal disease, and tends to a less favorable prognosis. The pulse in true aortic stenosis will be long and slow, and the artery will be small and full between beats.

Aortic stenosis proves fatal by the slow operation of dropsy, mitral regurgitation following as a result of dilatation. But the danger is not imminent so long as the aortic obstruction is uncomplicated by mitral trouble. Dropsy having once set in in a case of aortic stenosis, there is less probability of recovery than in most other valvular affections. Finally, most authors agree in placing aortic stenosis as the least dangerous of valvular troubles.

II. Aortic Regurgitation.

The diagnosis of this affection offers no difficulty. The elements of prognosis, when the symptoms have not become prominent, and compensation is fairly effectual, are briefly as follows: If with the diastolic murmur the second sound be distinctly audible in the neck, the dilatation and hypertrophy are inconsiderable, and the pulse exhibits the collapsing character only in a moderate degree. If the valvular lesion be the effect of acute endocarditis, and therefore probably stationary, the prognosis is favorable. If, on the other hand, the second sound is completely abolished, with hypertrophy, dilatation, and a collapsing pulse, the prognosis is grave, and the comfort and life of the patient depend greatly upon his family constitution, age, habits, occupation, and circumstances. It should be remembered that the heart's nutrition is not well maintained after middle age, and that there is a tendency to increased peripheral resistance with increasing age.

Coming on late in life, aortic regurgitation is always serious. The disease is progressive, and finally ends either from a failure of the ventricle in systole (in which case we have the attacks of angina, paroxysmal dyspnœa, weak and very irregular pulse, etc., but no dropsy), or death ensues from venous obstruction, and the symptoms do not differ materially from those of mitral insufficiency. Sudden death may be expected, and is the rule in aortic insufficiency.

III. Mitral Insufficiency.

Mitral insufficiency is not a deadly kind of valvular affection, and is probably less serious than aortic stenosis, which is placed lowest in the scale of danger. A circumscribed mitral murmur, not heard in the back, is of little import; but care must be taken not to take the soft murmur of a gaping orifice and a weak heart as an indication of slight mischief.

The first indication of marked insufficiency is the accentuation of the pulmonary second sound, followed by hypertrophy and dilatation of the right ventricle from increased pulmonary pressure, with displacement of the apex of the heart, and hypertrophy of the left ventricle, with consequent increased cardiac impulse. At this stage the symptoms may become very serious and alarming, but proper treatment and care may establish the equilibrium

and the patient continue in fairly good health for years.

Moreover, a very important element in mitral insufficiency is the hypertrophy of the right ventricle and the consequent increase in its force, by which it causes increase of pressure in the left auricle, which resists the back flow of blood, while the pressure in the left auricle must be greater than the pressure in the arterial system. Much depends upon the extent of this peripheral resistance; the less the arterial tension the more favorable the prognosis. And it is just in this we may find, I think, the reason why in so many cases digitalis fails to do any good, the patient becoming steadily worse under its administration. Digitalis, while increasing the power of the heart, also increases very considerably arterial tension, which is the very thing in certain cases we wish to avoid. As long as compensation is established our prognosis is very favorable, but it grows, of course, less so if there are signs of dilatation, vascular derangement, etc.

So much for the prognosis, speaking generally, in these various cases of heart disease. How should the knowledge thus obtained affect our present way of dealing with risks for life insurance?

There is no questioning the fact that valvular disease may exist for many years without producing any secondary or disagreeable symptoms. Dr. Symes Thompson says that "it might cause surprise to some to learn that during ten years about 1000 cases came under the notice of a single physician in which chronic valvular disease existed, the presence of which was not indicated by symptoms, and did not sensibly interfere with the health."

Again, of 684 persons tabulated (by Sir Andrew Clarke), 326 sought medical advice, not for heart disease, but for disorders of digestion; 134 for disorders of the nervous system; 61 for rheumatic affections; 47 for respiratory disorders; 30 for skin diseases, and 33 for gout. In none of these cases was the presence of valvular disease indicated by symptoms, nor was the heart to any extent affected.

Dr. Thompson gives the following data from his own experience in two large life insurance companies, where risks with heart murmurs are "rated up":

"Taking the experience of one of my own offices (the Equity and Law Life), I find from the last analysis of invalid lives that of 5 cases rated up for disease of the mitral valve the average age of the insurers was 35 years, the average addition 23 years, and no deaths occurred during the period comprised in the report; whilst out of 15 cases in which the nature of the heart disease is not specified the age was 41, average addition 8 years, and 3 deaths occurred. From the subsequent course of these cases it appears that of the first series, those with mitral disease, two have since died, one after having been insured for 13 years, to whose actual age 7 years had been added. Had 12 been added, no loss would have occurred to the office. In the other fatal case, which also occurred from heart disease, 10 years had been added to the actual age, but the policyholder died at the end of five years, and an addition of 20 years would have been needed to save the office from serious loss.

"In two other cases of the mitral series the results have been good; the cases were rated up to 20 and 25 years respectively, and are now living, having been insured, the one for 22 and the other for 12 years. Taking this series alone, the gains fairly balance the losses.

"In the other class, that in which no definite valvular disease was mentioned, 6 deaths have occurred, one by accident one year after the policy was taken out, and two others at short periods, viz. 6 years and 9 years. In two they lived 27 and 18 years respectively.

"Of the 7 cases now living, all have lived long enough to cover loss, and 3 have proved very advantageous. Thus, this class, like the first, has not been found by experience unsatisfactory, although in many of the cases the extra rating had not been nearly sufficient; and, curiously enough, this is specially true with the lives that have proved unfortunate.

"The general results of the experience of these cases have been confirmatory of the received opinion that where definite heart disease exists, a really considerable addition is demanded."

In view of these facts, the injunction of the various American companies that "heart disease shall be cause for absolute rejection," seems to me to be too absolute and too general, while I recognize fully the importance of a wise caution in the selection of lives for insurance, it seems to me that too great caution has hitherto been observed. After all, in examinations for life insurance, justice should be done the applicant as well as the company. But the question naturally presents itself: How shall we in such cases distinguish the favorable from the unfavorable risk?

The first important point to be determined is whether there is any evidence of degenerative change, obstruction of the circulation, or liability to rheumatism or gout. The mechanical and vital power of the heart is more important than the murmur, and, within certain limits, than the seat and nature of the valve lesion. The only two forms of such disease which I consider as "ratable" are mitral insufficiency and slight aortic stenosis. Speaking generally, aortic defect is most to be dreaded; mitral lesions, on the other hand, being the most hopeful.

Again, a heart that has been damaged by rheumatic fever during the period of growth is more likely to be adjusted to the extra work thrown upon it than when the disease occurred in adult life. Often all evidence of disease disappears in a few years, and the heart beats in the normal position, showing that no serious hypertrophy has occurred.

The most marked and easily recognized lesions are not those to be most dreaded; there is more importance to be attached to signs of weakness or enlargement of the heart, to a change from its normal position, to signs of degeneration in its walls or those of the bloodvessels, and to the conditions of life, than to the murmur merely; and a patient whose life is happy, active, pleasant, and prosperous, will be more likely to live out his expectancy than one who, with a smaller amount of actual lesion, has an harassed, anxious, life of toil, confinement, and trouble. Sir A. Clarke himself lays down five propositions with regard to disease of the mitral valves: First. That there shall be no degeneration of the heart. Secondly. That the disease shall have existed two years. Third. That the ventricles shall be in good order. Fourth. That the arteries shall be sound. Fifth. That there is no persistent basic

nor recurrent hepatic congestion; that colds shall not hang about the patient, and that his general health shall be good; given all these and, says Sir Andrew, "the mitral disease will not shorten life." Dr. Bristowe says: "When I find a mitral systolic murmur extending over many years, that the second sound is not accentuated, and that the apex (of the heart) is in its place, I think I am justified in admitting them" (for insurance).

Dr. Clifford Allbutt made a very practical suggestion on this point. It was that such cases should be put upon the early-payment system, so that all premiums should be paid up before the age of thirty-five.

Finally, Dr. Borland says:

"The whole summary of the matter seems to be that the selection and admission of these cases is one of great delicacy, and requires the highest qualifications of experience and tape, sound judgment on the part of the physician; that though in the hands of a few men of exceptional experience a few (very few) cases of aortic valvular disease may be admitted at a greatly advanced premium rate, yet that as a general rule for the majority of examiners the safe course will be rejection. But as to mitral disease of some standing, dating from early life, and occurring in otherwise healthy, temperate persons, subject to no laborious exertion or great anxieties, and having no enlargement or displacement of the organ, and no fatty or other degeneration of heart or arteries, an addition varying with circumstances from ten to twenty-five years should be made to the actual age."

FUNCTIONAL MURMURS, THEIR SITE, CAUSATION, AND PROGNOSTIC IMPORTANCE. HOW SHOULD THEY AFFECT THE SELECTION OF RISKS FOR LIFE INSURANCE?

The heart murmurs known as functional have been the subject of much discussion and difference of opinion. It has been customary, however, to include under this term all those cases in which the murmur depends upon temporary and curable conditions, or in which no distinct alteration of the valvular segments can be detected after death. Functional murmurs are invariably systolic in time, and are heard, as the case may be, over the true pulmonary area, close to the left of the sternum between the second and third ribs; 2d, over a space of about an inch and a half to the left of the sternum, and in the second interspace just where the left auricle comes up from behind to the left of the pulmonary artery; 3d, over the aorta. The murmurs in these three situations are usually found in some form of chlorosis or anæmia, or in the course of acute febrile disease, and may be dependent upon a changed condition of the blood, constriction or dilatation of the artery, or acute dilatation of the heart.

Pulmonary systolic murmurs are more frequent than any other form of cardiac murmurs. Dr. Guiteras, of Charleston, states that in 100 consecutive cases he found 62 systolic pulmonary murmurs.

The clearness of the murmur depends upon the proximity of the artery, the thinness of the chest walls, and the proximity of the main trunk to the capillary circulation. It seems to be generally acknowledged that a systolic pulmonary murmur may be *developed in healthy individuals* by modifying the act of breathing; and this is a point which is of special interest and importance with reference to life insurance. These murmurs are confined in ordinary breathing to the expiratory act, being loudest at the beginning. They frequently disappear when the chest is elevated in inspiration. Sometimes a very slight, shallow inspiration causes the murmur to disappear. Again, it does not disappear even upon the deepest inspiration. Another interesting and important peculiarity of this murmur is that it is very frequently inaudible when the individual is in the erect position, but at once appears when the recumbent posture is assumed. Again, the murmur is sometimes only heard with the first beat that occurs with expiration. Finally, the fact that a loud systolic murmur in the pulmonary region may be found in a perfectly normal heart cannot be too forcibly emphasized. The causation of these inorganic pulmonary murmurs has been a source of much discussion.

It has been generally asserted that the sudden propulsion of a large amount of spanæmic blood into a dilated vessel would be sufficient cause for their production. Again, Dr. Russell holds that the murmur is caused by a constriction of the pulmonary artery by a dilated left auricle, while Quincke, of Berlin, thinks that the artery is compressed by the heart during its systole, following an uncovering of the base of the heart by a retraction of the lung, which, I take it, is the opinion of Balfour.

Dr. Guitéras would explain a murmur in the pulmonary area as a "dynamic obstructive murmur produced by the effect of changes of blood pressure upon the semilunar valve. A certain degree of pressure in the artery must tend to prevent the opening of the valve; this would or might cause a slanting position of the valve and a narrowing of the orifice, with the production of a sonorous whirl"—an explanation, I think, which has much to support it, for an accentuated second sound always accompanies a pulmonary murmur—sure evidence of increased pressure in the pulmonary artery. Dr. Guitéras goes on to say that, "the fact that such murmurs are not more frequently developed at the aortic orifice is due to the greater power of the left ventricle and the wider distribution of the systemic circulation."

Pulmonary murmurs then, as we have seen, are found under very varying conditions, and are *compatible with perfect health*. Are we then justified in rejecting a person for life insurance in whom after careful examination, we diagnosticate such a functional murmur? I say emphatically, No. Only two weeks ago I examined one of the most thoroughly healthy men I have seen for a long time—a man of fine physique, good habits, excellent family history, an active and prosperous business man. His pulse was 76, full and strong, but on listening to his heart I discovered a distinct murmur over the pulmonary artery. I was, much to my own chagrin and his annoyance, compelled by the company to turn the risk down. Surely great injustice was done, and I hold that such cases are perfectly legitimate risks for a life insurance company to take.

AORTIC SYSTOLIC MURMURS.

Functional murmurs at the aortic orifice are found in anæmia, and in the course of acute febrile diseases such as typhoid and rheumatic fevers, and also in those persons who are under great strain, who are overworked, anxious, and excited. There are many causes which may produce an aortic systolic murmur. If in an examination for life insurance such a murmur is found, the important point to be ascertained is whether the murmur indicates the existence of actual obstruction. If there be marked anæmia, other things being equal, we should, of course, conclude that the murmur was hæmic. It should be remembered that a systolic aortic murmur appearing at middle age or in advanced life will seldom be due to actual narrowing of the orifice, but is probably due to roughness and irregularity of the valves or slight dilatation of the aorta. The loudness or general character of the murmur does not give us much help. Hæmic aortic murmurs are usually soft and smooth, but so also may be murmurs due to extreme narrowing, especially when there is weakness of the ventricle. Thus a gradual enfeeblement and disappearance of a systolic aortic murmur may be a most serious prognostic fact. It is plain, then, that there are many things to be considered and careful attention required before we can say whether a systolic aortic murmur is surely functional. But such a conclusion having been arrived at, it is only just to the person who is an applicant for life insurance to postpone the risk in order to see if the murmur may disappear. I have made it a rule for some time past to postpone such risks, and have no reason to regret such action. We have been too sweeping in the past in condemning such cases, and so depriving men who are in reality perfectly healthy, of the protection of life insurance.

Much might also be said on that condition known as curable mitral regurgitation, but my paper has already exceeded all reasonable limits, and I shall have accomplished my purpose if perchance I have shown that a murmur by itself is nothing; that they have little if any pathological significance, unless other changes are associated with them; if I shall have impressed the fact that great care is necessary for a proper prognosis, in justice to our patients and ourselves; and, finally, if I shall have forced upon the notice of medical examiners how necessary it is to decide exactly the significance of any given murmur before rejecting the person applying for the insurance.

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SYPHILITIC CIRRHOSIS OF THE LIVER IN A CHILD.

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The occurrence of syphilitic cirrhosis of the liver in a young child is but seldom met with in general practice, and the report of a case may not be without interest.

Katie, aged twelve years, when first seen was bright and intelligent. Her parents gave a satisfactory history of entire freedom from specific disease. Thorough inquiry failed to elicit the slightest evidence of any hereditary or other disorder. The mother aborted at about the fifth month of her first, second, and fifth pregnancies, but from causes satisfactorily explained. The father and mother enjoy good health. The children of the family are healthy and robust, presenting no symptoms of scrofula, syphilis, or other disease; their teeth are even, regular, well shaped, and firm.

Katie, the second oldest of the children, we are informed, was a fat, rosy baby, and was never troubled with any sickness until about the third year, at which time she and an older brother were vaccinated by a barber. Two attempts resulted in failure; the third produced a small pustule at the point of puncture on the arm, and was speedily followed by the development of an intractable ulcer on the posterior surface of the right knee. Her brother had a similar ulcer on the sternum.

So-called smallpox occurred in both the children three or four months afterward, but did not present certain characteristics of the disease. The eruption was confined chiefly to the face and thoracic regions, was pustular in form, and distributed unevenly over the surfaces, and very few crusts were formed. There were no cicatrices or pits left, except where the initial ulcers, previously spoken of, had been located. Both children were but slightly ill, and promptly recovered. The boy has remained well, except during an attack of typhoid fever in 1883; the girl, however, was afflicted with various sicknesses for a period of four years after the vaccination. In the order named came: first, at three years, smallpox; fourth year, scarlatina; fifth year, diphtheria; sixth year, pneumonia of right lung followed by dropsy. The diphtheria was of great severity, and was complicated with "sore eyes" and greatly enlarged submaxillary glands, the latter suppurating and requiring the use of the knife. Her recovery was very protracted.

When about seven years of age her parents noticed that her gastric and hepatic regions were becoming prominent, but paid little heed to the circumstance. The distention becoming greater from year to year, medical advice was sought, and she came under notice in May, 1885, when twelve years of age, and was seen occasionally from then until March, 1887. Her abdomen was found to be greatly enlarged in all directions; the umbilicus depressed; the superficial veins not prominent; her body fairly well nourished; the skin clear; no jaundice or œdema. Palpation showed the liver to be enlarged in both lobes; also the spleen. Dulness exceeded normal limits two inches downward in the hepatic, and a fraction over three inches in the splenic regions; sulci could be determined between the right and left lobes of the liver, and between the left lobe and the spleen. A tympanitic space was found at the cardiac orifice of the stomach and in the lower abdomen. The prominence of the latter was due to the crowding downward of the intestines by the mass above. Her appetite and digestion were good; there was absence of pain; slept well; temperature normal; lungs and heart normal.

Measurements made at this date and the two succeeding years were as follows:

	Inches.		
	1885.	1886.	1887.
Circumference of body at lower end of xiphoid cartilage	25	26	28
Midway between above point and umbilicus	27	27½	28¾
At umbilicus	27	27	28¼
From end of xiphoid cartilage to genital fissure	14	15	16½

These measurements indicate the rate of enlargement to have been about one inch annually.

Notwithstanding the great pressure which was exerted upon other organs, the absence of distressing symptoms

continued until a few hours previous to death. This very immunity to complications made a diagnosis impossible. The urine was frequently examined, and was always found to be normal.

In seeking a diagnosis the presence of a deep-seated echinococcus cyst was taken into consideration, because her diet had consisted largely of raw scraped beef during her several illnesses. A small quantity of albuminous fluid was secured from the most prominent part of the liver, and microscopically examined by Dr. E. B. Bayliss, but gave only negative results. Shortly afterward a diagnosis of hepatic cancer was made at the clinic of one of the medical colleges in Cincinnati.

The treatment during the entire time from 1885 until her death, in 1887, consisted of systemic tonics, preparations of mercury, arsenic, and potassium iodide, alternated as was deemed advisable. Later events proved this to be the appropriate treatment, although probably not begun at a date sufficiently early to eradicate the diseased nodules found after death.

The last forty-eight hours of life were marked by hemorrhages from both stomach and bowels. The left side of the neck and face became swollen and œdematous, and left hemicrania appeared, otherwise there was no discomfort. One hemorrhage greater than the preceding ones suddenly terminated life.

Autopsy, twenty hours after death, by Dr. James M. French, of Cincinnati. Rigor mortis moderate. Slight ecchymotic discoloration of posterior surface of the body. Eyelids œdematous, especially the left, the swelling involving the whole of that side of the face. Brain not examined. Heart and lungs normal.

The liver appeared as a mass of round or rounded nodules of a yellow color, varying in size from a hen's egg to a pea, and even smaller. The organ was with difficulty dissected from its abnormally firm attachments and removed. It was considerably enlarged, weighing five pounds, irregularly nodulated throughout, and much firmer than usual; in no way, in fact, resembling a healthy liver. Section revealed numerous firm, irregularly distributed fibrous bands, and a large number of rather firm, not hard, masses, varying in size between a hulled walnut and a split pea. These masses were found in greatest number in the region of the transverse fissure. The surfaces of these on section was not altogether smooth, but emitted no juice, and none could be obtained by scraping.

The gall-bladder was partially filled with bile and mucus. The spleen was about twice its normal size, but not much firmer than usual. The right kidney was normal in size and appearance, but on incision two small collections of pus were found. The left was much increased in size; capsule slightly adherent; interstitial tissue hyperæmic; and the pelvis contained about one drachm of pus. The stomach and intestines contained dark fluid and tarry blood. A few slightly enlarged mesenteric glands were observed, but no general adenopathy.

Sections of the liver for microscopical examination were made mostly in such a manner as to include a portion of the harder nodules referred to above, and some of the surrounding tissues. These nodules were found to be composed almost entirely of very delicately fibrillated connective tissue, exceedingly rich in nuclei, the fibres of which had been divided in the section both longitudinally and transversely. Some embryonic cells were also present. The appearance was that of old gummatous formations. The tissue surrounding these masses was made up of the parenchymatous elements of the liver, for the most part in a state of fatty degeneration, and a large amount of fibrous tissue. The bands of this tissue were more than double in amount those which normally separate the hepatic lobules, and, in addition to being very irregularly distributed, contained exceedingly numerous embryonic cells. These fibrous bands were largest in the portions of the organ corresponding to the great depressions of its surface.

That other causes than alcoholism will operate to produce a cirrhotic condition of the liver is becoming more and more manifest. Syphilis as a cause of the disease has been acknowledged since the description of it given by Gubler, in 1852. French, in the *Reference Handbook of the Medical Sciences*, vol. iv., p. 543, states: "In a certain small proportion of cases the disease is independent of alcoholic indulgence. Acquired syphilis may produce a hyperplasia of the interstitial tissues of the liver which is usually very irregularly disseminated throughout the organ." As gummata were found numerously scattered throughout the liver, and were proved by the microscope to be syphilitic in character, the conclusion that the cirrhosis was dependent upon acquired syphilis must be accepted.

As to the method of infection, the supposed vaccination is the only acceptable source. Bumstead, Taylor, and others point out the dangers and accidents which may result from the careless use of an infected scarifier of whatever kind. Also, that the blood of a syphilitic, introduced into a wound on a non-infected person, will produce the original disease. In the present case it is not improbable that the barber, in vaccinating the children, used an implement common to his trade, a razor, which had been improperly cleansed after use; or he may have used crust virus, in which there was a portion of unhealthy blood. From whichever cause happening, the thought of danger should be a warning to the physician to have his instruments scrupulously cleansed after each and every vaccination, and, if possible, not to use humanized virus in the operation.

MEDICAL PROGRESS.

THE CREASOTE TREATMENT OF TUBERCULOSIS.—SOMMERBRODT is quoted by the *Medical Chronicle* for July, 1887, as follows:

The author gives the results of his treatment of about 5000 cases of tuberculosis of the lungs and larynx, continued throughout nine years. For two years—1878 to 1880—he used Bouchard's solution of creasote. Since 1880 he also used gelatine capsules, containing each ¼ of a grain of creasote and 3 minims of balsam of tolu, commencing with one capsule the first day, and gradually increasing to six capsules a day in the fourth week, and after two months nine per diem; as many as from 600 to 2000 capsules being thus taken by each patient without a break. He did not neglect other means, such as "lung gymnastics" and ventilation, and other favorable conditions, but still continued the creasote treatment throughout. The result in many cases was a very favorable influence upon the disease—a marked diminution in the cough, even at the commencement of the treatment, lessening of expectoration, improvement of the appetite; even night sweats and fever ceased without the use of quinine, agaricin, etc. The physical signs were often greatly improved, even to the disappearance of dulness on percussion. He believes that he has thus *cured* cases of tuberculosis by insisting upon a continuance of the treatment. Tubercle of the larynx,

though a hindrance, is not a bar to its use. It is at least a testimony to its value that after nine years' experience the author steadily pursues this treatment. The following case is given: "On November 17, 1886, a gymnasium student, aged sixteen, came under my notice with considerable tubercular infiltration of the right lung. He had taken the usual dose of one capsule of creasote three times a day, but on December 28th he came again and reported very considerable improvement in every respect. Through a misunderstanding it appeared that he had taken three capsules at a time, three times a day—about half a gramme per diem. His excellent state of health induced me to make no alteration, and on January 16, 1887, he had used in this way 627 capsules, in 73 days 7¾ drachms of creasote. He hardly coughed at all, had increased 6 pounds in body weight, there was no dulness at the right apex, only slight rhonchus, expectoration had quite ceased, the urine was normal, and his general health had so much improved that he went back to school."

A Convenient Application for Rhinitis, with Ozæna.—Penny, in an article in the *British Medico-Chirurgical Journal*, No. 16, 1887, gives the following as having done good service in his hands:

Iodoform	gr. x.
Ol. eucalyptol.	ʒj.
Pulv. acid. boracic.	ʒj.
Ol. sassafras ethereal	ɱx.
Vaseline	ad. ʒj.

Excision of the Knee-joint by Longitudinal Incision.—Dr. Senn thus describes this operation as performed by Riedinger, of Heidelberg:

The patient was a boy about six years of age, suffering from tuberculosis of the knee-joint. Evidently the disease was in its earlier stages, as the joint was only moderately swollen and did not present that sense of semi-fluctuation as is the case in advanced fungous inflammation of this joint, at the same time the articular surfaces were not displaced. The operation was performed as follows: The whole limb was thoroughly washed with warm water and soap and subsequently with a 1:1000 solution of sublimate. Esmarch's constrictor was applied about the upper third of the thigh, and a *longitudinal* incision made over the centres of the patella, dividing the tissues with one stroke down to the bone, and passing through the lower portion of the quadriceps and the tendon of the patella. At a corresponding point the patella was sawn through in the same direction, so that the divided patella and the soft parts presented two symmetrical halves, which when separated exposed the joint fully to inspection, both by sight and touch. Without much difficulty the lateral halves were so widely separated that the lower end of the femur was brought fully into the wound and the articular end was removed with a saw, the line of section being below the epiphyseal cartilage. The tibial end was treated in the same manner. At least two osseous foci were exposed by the bone sections, and each was carefully scraped out with a sharp Volkmann's spoon. This long anterior incision fully exposes the upper recesses of the synovial sac, and renders the extirpation of the entire capsule an easy matter. After the extirpation of the capsule with curved scissors the whole surface was irrigated with a sublimate solution and carefully dried, and the parts restored to their normal relationship, and the two halves of the patella tacked together by applying two catgut sutures passed through the tendinous covering and periosteum, but not through the bone.

The only provision for drainage was a rubber drain introduced into the upper angle of the wound. As the limb is kept in a nearly perpendicular position for at least twenty-four hours, the drain occupies the most dependent position of the wound, and answers all requirements. The remainder of the wound is closed with silk sutures. A copious gauze dressing, embracing nearly the entire limb, is applied, over which a thick layer of absorbent cotton and equable compression by bandaging limb from toes to groin. A posterior hollow splint, with footboard, serves to immobilize the limb. The constrictor is not removed until the whole dressing is applied. The first dressing is not changed for a week, when the drain is usually found outside of the wound. As the wound at this time is usually firmly united, the sutures are removed and the limb put in a plaster-of-Paris splint. Anatomically this operation presents a number of advantages. I have always observed after making the transverse incision, that on account of muscular traction of the extensors of the leg, there is not only a tendency for separation of the fragments of the patella, but a constant traction always results in the formation of a wide and often ugly cicatrix, in the skin; conditions which are avoided by the anterior longitudinal incision. When the articular ends of the bones are brought fully into such a wound by forcibly flexing the leg upon the thigh, the entire synovial sac is brought into full view and rendered accessible to removal with scissors. The tissues divided in the direction of the axis of the limb, serve a most useful purpose in securing immobilization during the process of repair.—*Journal of the American Medical Association*, July 16, 1887.

A Formula for Ergot, Hypodermatically.—Hildebrandt recommends the following:

Aqueous extract of ergot . . .	3 parts.
Glycerine,	
Distilled water, each	7 parts.

From five to twenty drops may be injected beneath the integument of the thigh or abdomen to check uterine hemorrhage.—*Journal de Médecine*, July 3, 1887.

A New Test for Milk.—A new test for water—that is, pump water—in milk has recently been proposed by Herr Szilasi. This depends on the fact that sulphate of diphenylamine is colored blue by the action of an exceedingly dilute solution of a nitrate. As well water always contains more or less nitrate, its presence in milk can be detected. The test is carried out thus: Twenty minims of sulphate of diphenylamine is placed in a small porcelain vessel and a few drops of the milk which is to be examined added to it. If this contains even five per cent. of average well water, a blue tinge will gradually distinctly appear. Sulphate of diphenylamine is easily procurable, and only costs about sixpence an ounce, so the test may be readily tried.—*Lancet*, June 11, 1887.

THE PROPER METHOD OF EXAMINING THE BREAST.—DR. GROSS says that, to examine properly a woman's breast, she should be lying on her back. If examined in any other position, it can be so manipulated as to convert it into any tumor. When on her back, examine by pressing the tips of fingers back through the breast against the chest walls, and not by pinching the structures up between the fingers—*College and Clinical Record*, July 1, 1887.

THE TREATMENT OF ACUTE CORYZA.—FRITSCHE, of Berlin, has found the following useful:

R.—Acid. acetic. glacial,
Acid. carbolic. . . . . aa gr. 30
Mixt. oleoso-balsam. . . . ʒ 2
Tr. moschi . . . . . ♏ 15.—M.

Fifty drops of this may be put upon cotton and enclosed in a convenient flask. Inhalations, at first every half hour, and later at longer intervals for ten minutes, will be found beneficial.—*Berliner klinische Wochenschrift*, July 4, 1887.

THIERSCH'S METHOD OF SKIN-GRAFTING.—DR. MYNTER reports this method, as proposed by Thiersch, of Leipzig, and as he has used it in the Buffalo (N. Y.) General Hospital, as follows:

The granulations are removed by the aid of a sharp spoon down to the underlying firmer tissues, and the rather copious bleeding stopped by pressure with compresses dipped in a solution of chloride of sodium, 0.6 per cent. The bleeding stops generally in the course of five to ten minutes. The flaps are now cut with a sharp razor, generally from the outer surface of the humerus, and then transferred directly on the shining surface of the wound, deprived of its granulations. The flaps are five to ten centimetres long, one to two centimetres broad, and contain, even if microscopically thin, the whole papillary layer and a part of the underlying stroma.

The flaps are completely unravelled by aid of two probes, and then firmly pressed against the surface by aid of a soft sponge dipped in the same solution of chloride of sodium. The transplanted wound is covered with a piece of protective dipped in the salt solution and an antiseptic bandage applied over it, which is not disturbed for eight days; the superficial wounds produced by the razor healing in eight days under iodoform bandages. If the wound be completely covered with flaps it will be healed in about eight days; but in very large ulcerations, especially after severe burns, it is almost impossible to get skin enough from the patient himself, and one will then after eight days have the opportunity of seeing not only the growth of the flaps themselves, but also the stimulating effect on the border of the wound, which is quite wonderful to observe. It is astonishing to see how quickly the cicatrization progresses in those large ulcerations from the border and the numerous islands formed by the new flaps.—*Buffalo Medical Press*, July, 1887.

THE TREATMENT OF NERVOUS DYSPEPSIA.—IHRING, of Offenbach, is quoted as follows by the *Journal of Dietetics*, No. 2:

We should first recommend a milk diet—lukewarm milk with or without crushed rusk. Unfortunately, through the habit of using highly seasoned dishes from youth up, we often find an aversion to milk. To cover its taste with sweet is not to the purpose, but we have at times added a small quantity of malt extract. The addition of cognac to the milk, as is used with phthisical patients, is equally imprudent. The best thing to give it an agreeable taste is a little table salt. Among other things we may add a little cocoa, deprived of oil, but with little sweetening, and some interruption, as in many cases an aversion for cocoa sets in. Tea is in some cases tolerated when cocoa causes loathing, but coffee has a dyspeptic effect. Tea has a tendency, especially if strong, to produce nervous palpitation of the heart, and, if left too long on the leaves, dyspepsia. If none of these beverages can be taken, we may at first use soup for breakfast. Amylaceous substances here especially find their place, and in the preparation of such among these as barley, oats, rice, etc., the precaution to have them long and thoroughly boiled should be given. For a second breakfast, some bouillon free from fat, with an egg; at noon, a plate of soup, with a corresponding portion of extract of meat. The last meal of the day ought to be taken at least two hours before going to bed, and should consist of beef-tea, with eggs and stale white bread. Milk may at any time be taken in place of one of these meals; so may eggs beaten with a little salt and water.

According to physiological experiments on digestion, boiled albumen appears to be more easily and rapidly digested, but in reality raw albumen is more easily peptonized than the solidly cooked lumps of albumen, because the movements of the stomach separate it with facility, and it is soon saturated with gastric juice.

If the appetite gradually returns, and the articles of food named are tolerated in larger quantities, we may intercalate another meal; the soup may also be prepared from scraped beef and the latter eaten with it. Gradually a saucerful of the articles already mentioned may be taken every two or three hours. This amount will be sufficient for a long time.

If, under this regimen, gastric digestion takes a normal and rapid course, the sense of hunger may be felt oftener than every two or three hours, but the patient should not yield to his cravings. The time will then soon arrive when more consistent food can be taken, especially properly cooked meat. The opinion that so-called white meat is especially well borne, has not always been confirmed in practice. It may perhaps be the case with pigeon and chicken, etc., but veal is certainly barely tolerated, owing, probably, to the large amount of gelatine it contains. As a rule, boiled meat is better tolerated than roast; and cold roast better than warm, and this is particularly true of game. With the latter, fat gravy, and the fat of pork especially, plays a very injurious part. Meat not too strongly salted is well borne, but the smoking process will spoil this advantage. The flesh of geese and ducks is difficult to digest.

Most patients will dislike to dispense with vegetables, but the very lightest of those only should be allowed until after improvement has made some progress; we may then allow carrots, spinach, and tomatoes; lettuce and salads, and especially potato salad, should be strictly forbidden. If the patient chafes under the pro-

hibition of all kinds of preserves, he may, when convalescent, partake of stewed cranberries, strained and sweetened. Dyspeptics cannot bear raw fruit at all.

In all cases where circumstances will not permit the diet which has been described, a milk diet will be the best thing. Or when place and time are favorable, Krukenberg's direction, "When you are hungry, eat buttermilk; and when you are thirsty, drink buttermilk," should be observed. This milk, freed from the large mass of caseine, is a real panacea, and a dietary course of it is easily carried out in the country during the summer season. But caution prescribes that it should not be taken simultaneously with other food, as the rule not to drink when you eat, and not to eat when you drink, is even more imperative for dyspeptics than for persons suffering from adiposity. Patients are most difficult to manage in regard to their diet after they begin to feel better; and when, in consequence of their long fasting and their necessarily reduced condition, a strong desire for food is manifested, an adequate addition of fat of the proper consistency will greatly lessen the danger of excess, as will be mentioned hereafter.

Of the greatest importance in cases of tympanites is the local application of water, preferably the "Neptune belt," since it acts as a desiccative upon the skin. If the sensibility of the skin is impaired in a high degree, we may, instead of cold water, dip the cloth in a solution of salt. The "Neptune belt," is best applied over night, like the Priessnitz bandage, and can be followed in the morning, first by moist and afterward by dry friction.

Sitz baths of from ten to fifteen minutes' duration, twice a day, are of excellent service, in case the rectal sphincters are contracted, or hot and sensitive. Water may be used at about 50° to 55° C., and in the course of time the temperature can be further reduced, as patients get easily used to it. After a sitz bath the spasmodic contraction of the anus will rapidly cease, and the swelling of the mucous membrane subside. The piles empty themselves and shrink, flatulency disappears, eczema in this region will heal without further treatment, so will fissures, and operative treatment for spasmodic strictures becomes superfluous. There is still a prejudice against the use of sitz baths for abscesses around the anus, for the reason that tuberculous foci are often found there, with consecutive rectal fistulæ, and it has been supposed that sitz baths cause congestion of the lungs. We take no share in this view, and would merely raise the temperature in cases where the rectal walls are lax. When lukewarm full baths are not deemed necessary, cold, moist, and afterward dry frictions should take their place.

Thymol in Cholera Infantum.—Ungar uses the following with good results:

Thymol	gr. 2¼.
Spts. vini gallici	ʒvj¼.
Aquæ destill.	ʒvj½.

Of which teaspoonful doses are to be used as the physician's judgment dictates.—*Revue Générale de Clinique et de Thérapeutique*, June 30, 1887.

Does Curetting the Interior of the Uterus Destroy the Possibility of Conception?—Heinricius, of Helsingfors, Finland, reports 60 cases of fungous endometritis treated by curetting the endometrium: 25 of these cases followed parturition or abortion. Among these 25 patients 15 became pregnant after recovering from the treatment, of whom 5 were less than thirty years old, 8 less than forty, and 2 more than forty. In the 10 cases remaining there was no report from 1; 1 was a widow; 1 was thirty-nine years old, and 7 were over forty. Of the 35 cases whose endometritis was not caused by pregnancy, there was no report of 6, and 1 died; of the remaining 28 only 1 conceived after treatment. In all, of 52 patients on whom curetting was done, 16, or thirty per cent., afterward conceived. Pregnancy occurred twice in the fifth, once in the eighth, and once in the fourth week after recovery among these patients.—*Centralblatt für Gynäkologie*, July 2, 1887.

Experimental Insertion of the Ureters in the Rectum.—At the annual meeting of the Italian Surgical Society, held at Genoa in April, 1887, Professor Novaro, of Siena, read a very interesting communication on an experimental operation performed in January on a dog, for the insertion of both ureters in the rectum. The operation was successful, and the dog is now living and doing well. This operation was partially, and without good success, attempted by Gluck and Zeller, of Berlin. Bardenhauer, of Cologne, succeeded with only one of the ureters. Professor Novaro thought that in cancerous tumors of the bladder the complete extirpation of the bladder ought to be performed in two operations, reserving the explorative for the last. Scooping such a fragile organ only resulted in harm; moreover, only arrested the hemorrhage for a few days. The members applauded Professor Novaro for his successful result.—*Chicago Journal and Examiner*, May, 1887.

Birth during Maternal Syncope.—Freyer, of Berlin, in a work of medico-legal value, has made exhaustive studies of the literature of the subject, from which he draws the following conclusions:

1. The possibility of birth during maternal syncope is undoubted, and proved by many observations.

2. It is probable that this happens during concealed parturition much more frequently than under ordinary circumstances.

Phosphate of Sodium Hypodermatically in Phthisis.—Baratoux claims good results from the following:

R.—Sodii phosphat.	1 part.
Sodii sulphat.	1 part.
Aquæ destill.	15 parts.—M.

S.—Filter before using. Injections of from forty-five to ninety minims may be made once or twice weekly, in the sacro-lumbar region. These injections are followed by fever, cerebral excitation, and a feeling of fatigue for one or two days. A feeling of general improvement follows, the appetite returns, perspiration lessens, and expectoration loses its purulence. Gain in weight has been observed.—*Revue de Thérapeutique*, July 1, 1887.

The Dangers of Antifebrin and Antipyrin.—Two articles have recently appeared in the Hungarian medical journal *Gyógyászat*, in which the profession is

warned that acetanilide, or antifebrin as it is called, though it is not without value, is an uncertain, and indeed a dangerous antipyretic. DR. GÉZA DULÁCKSKA finds, after giving the drug a prolonged trial in the hospital, that small doses may bring down fever, but that in some cases even three-grain doses produce violent sweats, prostration, and hemorrhage or cyanosis. It does not appear to him to exert any favorable action on the course of the disease itself, being thus inferior to salicin, resorcin, and ichthyol. If given at all in fever, its action requires to be very carefully watched. In certain neuroses, however, Dr. Dulácksha has found it very useful, and as the doses required were smaller, he is disposed to recommend its employment in such cases, as it appears to be free from danger. In a case of severe trigeminal neuralgia, in which quinine, gelsemium, and morphia had produced but little improvement, three grains of acetanilide were given night and morning without effect; seven grains and a half were then ordered, divided into ten powders, one to be taken every two hours. This produced a great improvement, and after ten days of this treatment the cure was complete. No unpleasant effects beyond some nocturnal perspiration showed themselves. Two other cases, where severe pain was associated with meningo-myelitis and syphilitic tabes respectively, which had been treated in various ways unsuccessfully, were greatly benefited by acetanilide, no unpleasant effects being produced. DR. BIRO gave acetanilide in eighteen cases of various kinds, including typhoid, croupous pneumonia, pleurisy, polyarthritis, tuberculosis, and phthisis, in doses varying from a grain and a half to forty-five grains per diem, and was much struck with the uncertainty of its action, an effect being sometimes produced by a grain and a half, while at others ten or eleven grains had no effect at all. Most of the patients complained of chilliness, while cyanosis and irregularity of pulse occurred in several cases. In one case, where seven grains and a half had been taken, there was a severe rigor followed by cyanosis, sweating, and an irregular, thready pulse, the symptoms being so alarming that recourse was had to brandy and hypodermatic injections of ether. In another case, in which acetanilide had been given for eleven days, similar symptoms presented themselves, together with clonic spasm of the lower extremities, reminding one of the symptoms in anilin poisoning. Altogether, Dr. Biro thinks that the evil effects of acetanilide are so great that it cannot be recommended for general adoption.

Two Scandinavian physicians have recently written on the use of antipyrin, the apyretic properties of which they unreservedly admit to be the rule. Some exceptions, however, were observed. Thus DR. WETTERDAL, of Upsala, found in one case a rise of temperature during the first hour after a thirty grain dose of more than 1° F. Rigor and collapse never occurred in any of his cases. Copious sweating, however, was observed at times, over which atropine exerted no control. A rash with bluish-red spots on the face, as described by Wising, was also occasionally noticed. In some cases cinchona was advantageously combined with antipyrin. Dr. Laache, who made a special study of the action of antipyrin in phthisis, found that, though as a rule it brought down the hectic very satisfactorily, in one instance it produced, at first at least, a contrary effect, the temperature rising very markedly after a thirty grain dose. It afterward fell gradually, reaching a point decidedly below the normal. Simultaneously with the rise a rash appeared, and the patient complained of a burning sensation in the mouth and eyes and along the œsophagus. Curiously enough, the patient had previously taken antipyrin for a longer period without having experienced any unpleasant effects. The sample could not well have contained any poisonous admixture, as other patients took it with impunity.—*Lancet*, July 9, 1887.

A CONVENIENT APPLICATION FOR INSECT BITES.—BERNBECK uses the following:

Flexible collodion . . .	19 parts.
Salicylic acid	1 part.

Or,

Flexible collodion . . .	1000 parts.
Bichloride of mercury . . .	1 part.

—*Wiener Presse*, July 10, 1887.

THE PERCENTAGE OF SUCCESSFUL SECONDARY NERVE SUTURES.—MR. BOWLBY, of St. Bartholomew's Hospital, in a series of articles on injuries of nerves, reports the following results of suture in the *Lancet* of July 16, 1887:

The value of the operation of secondary suture can only be judged by a clinical study of patients, and by reference to recorded instances. Time does not permit me to describe in detail the clinical features of the various cases I have watched, or to do more than tabulate the records of other surgeons. For the present, therefore, I must ask you to accept this summary.

The following cases of secondary suture were performed in St. Bartholomew's Hospital up to December, 1885:

Median nerve: successful, 1; partially successful, 4; failure, 1—total, 6. Ulnar nerve: successful, 2; partially successful, 5; failure, 3—total, 10. Musculo-spiral nerve: successful, 1. Median and ulnar nerves: partially successful, 1. Grand total, 18—viz.: successful, 4; partially successful, 10; failures, 4.

Cases of secondary nerve suture recorded in surgical literature up to December, 1885:

Fifth cervical nerve: successful, 1. Median nerve: successful, 3; partially successful, 5; failure, 3—total, 11. Ulnar nerve: successful, 5; partially successful, 1; failure, 3—total 9. Musculo-spiral nerve: successful, 11; greatly improved, 3; failure, 2—total 16. Radial nerve: successful, 1. Median and ulnar simultaneously: successful, 1; partially successful, 2; failure, 3—total, 6. Median and radial simultaneously: partially successful, 1. Sciatic nerve: successful, 1; improved, 1; failure, 1—total, 3. Popliteal nerve: improved, 1. The above cases give a grand total of 49, of which 23 were successful, 14 partially successful, and 12 failures.

If the cases recorded by myself be added to those recorded by other authors, the totals will read thus: successful, 27; partially successful, 24; failures, 16—total, 67.

In drawing up the above summary I have been very careful not to include amongst the "successful cases" any but those in which there appeared to be either a complete or almost complete restoration of function.

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THE DIAGNOSIS OF CANCER OF THE STOMACH.

THE symptoms of cancer of the stomach are often so obscure, so misleading, and sometimes so entirely latent as to baffle the most experienced diagnostician, and the same remark may apply, with lesser force, to the physical signs of the disease. The cases most easy of diagnosis are certainly those in which a well-marked tumor may be felt in the epigastrium, a tumor, however, that may be confounded with neoplasms of liver, pancreas, intestine, and lymphatic glands, with biliary calculi, and simple inflammatory thickening of the anterior wall of the stomach.

Of the latent forms of the disease, those in which neither tumor nor decided gastric disturbance is present, a diagnosis, until within a recent period, could only be made by the most careful exclusion. At present, however, thanks to the labors of several German and French observers, we are in possession of certain facts which, taken singly, are of material aid in the diagnosis of gastric cancer, and, when coexistent, are pathognomonic of that affection.

In diagnosis of cancer of the stomach the greatest significance is to be attached to the absence of free hydrochloric acid from the contents of the viscus. In testing for this acid, certain precautions, emphasized by RIEGEL, in the *Zeitsch. für klin. Medicin*, Bd. xii., are necessary. In the first place, the stomach contents should not be examined within three hours after eating. Secondly, vomited matters are not suitable for examination, because emesis generally takes place within the proscribed period, and the chemical reactions are disturbed by large quantities of bile and mucus.

The technique of this test is both mechanical and chemical. The gastric contents are first withdrawn by the stomach-pump, or siphon, and the secretions may be stimulated by the introduction of a small amount (100 cubic centimetres) of ice-water, followed in ten minutes by a smaller quantity (3 cubic centimetres) of water of a much lower temperature. The whole is withdrawn, and submitted to the following tests: First, the presence or absence of free hydrochloric acid is determined; secondly, the digestive power of the liquid is ascertained.

As tests for the hydrochloric acid, the following substances are employed: Methyl-violet, lacmus, tropæolin, congo-red, gentian-violet, etc. In all his examinations, Riegel employs several tests, and, with regard to methyl-violet, he declares that, in the examination of several thousand specimens of gastric juice, he did not encounter one that digested well and gave no reaction with this substance; and, on the other hand, the specimens that gave the reaction always digested well. This important test is thus applied: Into each of two test-tubes are poured 50 c.c. of distilled water, followed by 2 drops of a 2 per cent. solution of methyl-violet. Into one of the tubes is now added, drop by drop, the fluid obtained from the stomach; to the other is added an equal quantity of pure water. If free hydrochloric acid be present in the gastric contents, the fluid in the first tube will turn blue, while, in the latter, it will retain its violet hue. According to RENAULT (*Revue Générale de Clinique et de Thérapeutique*, 16 Juin, 1887), methyl-violet may be replaced by gentian-violet, which gives the same reaction.

While there can be no doubt that the absence of hydrochloric acid from the stomach contents is a most important point in the diagnosis of gastric cancer, the general acceptance of the fact has been retarded by the unwarranted claims that have been made regarding it. For example, Von den Velden has formulated the law: "When hydrochloric acid is absent from the liquid withdrawn from the stomach, such absence is due to a cancerous neoplasm." This statement is refuted by the observations of Riegel.

In the course of the last year Riegel studied 16 cases of cancer of the stomach, in 5 of which the diagnosis was confirmed by an autopsy. In these 5 cases he made 154 analyses of the contents of the stomach with a digestive test and quantitative estimation of the amount of acid present. In none of these numerous analyses was free hydrochloric acid found, and in no instance did the filtrate of the stomach contents possess the power of digesting albumen. In one of the cases, hydrochloric acid, in large dose, was given soon after meals, but here, also, at the time of examination, free acid could not be found, and the gastric juice was without digestive power. In this case, on the days of the administra-

tion of hydrochloric acid, the acidity of the stomach contents, at the time of examination, was less than on the other days, which paradox is explained by the fact that hydrochloric acid prevents fermentation, and, therefore, lessens the amount of organic acids, especially the lactic, on which substance largely depends the acidity of the stomach in cases of carcinoma of that organ.

In 8 of the 11 remaining cases, 120 analyses failed to find either free hydrochloric acid or digestive power. In the remaining 3, there was found, at first, a very weak hydrochloric acid reaction and feeble digestive power. They were, therefore, regarded as beginning cases of carcinoma. Later, free acid was no longer found.

From these observations Riegel concludes that, in the gastric juice of a cancerous stomach, as a rule, both free hydrochloric acid and digestive power are absent, and that, on the other hand, if, in any case, free hydrochloric acid and normal digestive power are present, carcinoma may be excluded in spite of the most decided symptoms of that disease. He denies having ever asserted that the mere absence of hydrochloric acid from the gastric juice compels the diagnosis of gastric cancer, but believes himself to be the first to have demonstrated the absence of hydrochloric acid in other affections, such as amyloid disease of the mucosa, toxic gastritis, and continued reflux of the bile.

A search for enlarged lymphatic glands should always be made in cases of suspected cancer of the stomach. Troisier, of France, has recently called attention to the diagnostic importance, in this disease, of enlargement of the supraclavicular glands, a fact previously noted by Henoch, in 1863. It is stated by Renault (*loc. cit.*), that Jaccoud always examined the glands of the inguinal region in cases of gastric cancer. Enlargement of the supraclavicular glands has also been observed in cancer of the œsophagus, of the lung, of the pleura, and even of the uterus; but in the absence of symptoms of disease of those parts, it is confirmatory of the symptoms of cancer of the stomach.

Certain hæmatological researches of Quinquaud, are of undoubted value with reference to the diagnosis of gastric carcinoma. Occupying himself particularly with the differential diagnosis between dilatation of the stomach caused by cancer, and simple dilatation, he found, in the former, a much greater diminution in the amount of hæmoglobin in the blood. In health there are to every 1000 parts (grammes) of blood 125 of hæmoglobin, capable of absorbing 240 cubic centimetres of oxygen. In simple dilatation the figures representing the amount of hæmoglobin and its power of absorbing oxygen are 80 and 174, while in dilatation caused by cancer, they do not surpass 52 and 100. With this reduction in the amount of hæmoglobin, the corpuscles are correspondingly reduced in number, and frequently assume the characters, increased size, and altered shape, of the blood of pernicious anæmia.

Excuses for failure to make a diagnosis in cases of latent gastric carcinoma are only admissible when all the means to this end have been employed with negative results.

Leaving out of view the stomach symptoms proper, which are often misleading, it is believed that a chemical and digestive test of the secretions of the organ, a proper examination of the blood, a careful search for enlarged glands and cancerous cutaneous nodules, and, finally, a quantitative estimation of the amount of urea in the urine, will furnish facts sufficient for a positive expression of opinion in every case of real or supposed gastric carcinoma.

With reference to the excretion of urea, Rommelaere, of Brussels, held the opinion that cancer was always present when the amount, for twenty-four hours, was below 150 grains; and, although it has since been shown that figures as low may be reached in other states of inanition, the fact, when existent, has a decided diagnostic value.

For an excellent collocation and digest of our present knowledge of gastric cancer, with special reference to its diagnosis, the reader may consult with advantage, the already quoted article of Renault.

SALOL.

Although the coal-tar group has, as we have often remarked before, seemed an inexhaustible storehouse of medicinal substances, we have had lately introduced into general use a substance known as the salicylate of phenol, or salol, which differs from most of the other drugs of its class in that it is composed of two derivatives of coal tar, namely, carbolic and salicylic acids. Salol was first introduced to the profession by Sahli, in Berne, in April, 1886, and has since been very generally tested at the bedside.

Perhaps the most general consideration of its virtues as yet published is that of Georgi, in the *Berliner klin. Wochenschrift*, 1887, Nos. 9, 10, and 11, who unqualifiedly recommends its use in a large number of different diseases, particularly those connected with a rheumatic taint. He also believes it to possess marked antipyretic power in all of the ordinary fevers, and declares that as an antiseptic it surpasses most of its competitors by reason of its power and lack of disagreeable odor. It would be impossible here to enumerate all the conditions in which he has found it of value, and the very multiplicity of these conditions would throw reasonable doubt over its worth, but for the fact that other observers have established some of his assertions as facts.

Perier and Patein, in the *Revue de Chirurgie*, of July 10, 1887, have recorded favorable result when using salol as a substitute for iodoform as a surgical dressing. Thus in the case of a man suffering from an extravasation of urine, with gangrene of the part, iodoform was used as a dressing for about six weeks without marked improvement, but as soon as salol was substituted healing took place rapidly. In the case of an amputated finger, healing took place by first intention when salol was used as the dressing, and these observers think it a substance of no small value.

When given internally the dose is usually from 15 to 30 grains, and Sahli has taken as much as 120 grains without producing any ill results, other than slight ringing in the ears. Georgi has also found it useful in the form of a wash for stomatitis and erysipelatous inflammations, and, altogether, the reports made upon this drug so far are so encouraging that it certainly deserves at least a fair trial by the profession in general.

CONSERVATIVE MIDWIFERY.

Sufficient time has elapsed since the introduction of antiseptics in midwifery for the extreme and its reaction to have had their place, to be succeeded by the position of the safer middle ground. Thanks to the studies of those having the principal maternities of the world in their charge, we are now able to estimate the value of different treatments of the puerperal state, and deduce rules for the individual practitioner. No matter what the prejudices of the individual may be, the study of thousands of puerperal women by competent observers must yield facts whose import is binding upon all who take the responsibility of the care of human lives.

In the *Deutsche medicinische Wochenschrift*, No. 25, Leopold, of Dresden, states the results obtained in a year's practice in the Frauenklinik, where, from May, 1886, to May, 1887, 1403 women were confined, among whom there was not a single case of septic infection contracted in the clinic. Among the last 500 confinements there was but a single case of the sequelæ of puerperal complications, and that a mild case of parametritis. The total mortality was 1.2 per cent. from all causes, and seven Cæsarean sections were among the operations performed. These results were obtained by thorough cleanliness; by the use externally of 1 : 4000 sublimate solution to disinfect the woman approaching labor. The greatest stress is laid upon the disinfection of those who examine puerperal cases. Most important is considered the thorough cleansing of the hands, nails, and forearms for five minutes with brush, soap, and warm water. Then follows cleansing in warm 1 : 3000 sublimate solution with brush and soap, and, finally, immersion for half a minute in 1 : 1000 sublimate solution. Especial stress is laid upon the soap and water cleansing. In this clinic practical instruction is given constantly. Injections and all interference with the patient are resorted to as seldom as possible.

In *Le Progrès Médicale*, No. 25, Budin reports a year's service at the Paris Charité. Among 1349 cases there was a total mortality of 1.55 per cent.; from septic infection 0.29 per cent. Corrosive sublimate, 1 to 2000, 3000, and 4000; boric and carbolic acids and iodoform are used. Students and midwives are instructed.

In the *Archiv für Gynäkologie*, Band xxx. Heft iii., Credé, of Leipzig, expresses his decided convictions in favor of non-meddlesome midwifery, and bases his belief on the critical study of 8000 puerperal women. He expresses his view that what is needed is a rule of practice under all circumstances the safest in hospitals or dwellings. He cites 2355 cases with 0.3 per cent. mortality from sepsis. He lays stress upon preventing loss of blood as far as possible; on thorough disinfection of all which has to do with the patient; and on thorough antisepsis when interference is demanded. Regarding vaginal and intrauterine douches, he remarks, "The statement made in so many case histories that the patient's condition became worse '*in spite of*' antiseptic vaginal and intrauterine injections diligently used would be more correctly rendered in many cases if the word '*because*' was substituted for 'in spite of'". He reports a septic mortality of 0.6 per cent. in the Poliklinik, where the conditions are essentially those of private practice, and he indicates this as what, in our present knowledge, in private practice might be expected. He does not consider increased body temperature and pulse-rate, without decisive symptoms, as indicating disease, and thinks the profession and laity far too readily frightened by this cause. He advises practice in *external* examination by palpation; internal examination *almost never;* restriction of manipulation of lying-in women by students. He considers it of the greatest importance to puerperal women that "Their internal organs of generation be left entirely undisturbed for the first eight or nine days after parturition (neither examined, injected, nor in any way manipulated)." In the presence of disease or injury at parturition they are not to be disturbed while the disease lasts, or while wounds and lacerations are not yet healed.

It is only ripe experience which can give an honest thinker convictions such as these. The great restriction of vaginal manipulations in midwifery is an innovation in the teaching of the present day, which encourages students to depend upon it for diagnosis. There is no question of the soundness of the views expressed by the authorities cited, and insistence upon the thorough performance of the

essentials of antisepsis and thorough knowledge of the anatomy and physiology of the parturient will banish injurious interference, and are the duty of practitioners and teachers.

THE fifty-fifth annual meeting of the British Medical Association convened at Dublin, on August 2d. A large and enthusiastic attendance is reported, and the proceedings were of unusual interest. The address in medicine, by Professor Gairdner, of Glasgow, and the address in surgery, by Professor Hamilton, of Dublin, with the historical retrospect by the President, Professor Banks, of Dublin, were especially interesting and valuable. The Association now numbers over 11,000 members, and the total circulation of its Journal exceeds 13,000; its affairs are in a condition of the highest prosperity.

REVIEWS.

A MANUAL OF TREATMENT BY MASSAGE AND METHODICAL EXERCISE. By JOSEPH SCHREIBER, M.D., Member of K. K. Gesellschaft der Aerzte of Vienna, etc. Translated, with the Author's permission, by WALTER MENDELSOHN, M.D., of New York. 8vo. pp. 285. Philadelphia: Lea Brothers & Co., 1887.

MECHANO-THERAPY, since the dawn of rational pharmacology, is a recent science; and the number of new works which have lately appeared on this subject are a measure, in part at least, of its importance and of the consideration which is bestowed upon it by the leaders of therapeutic research. The work before us is one of five which have been issued from the German medical press alone during the last five years. It is probably the most practical, and it is certainly better illustrated than any of its predecessors. Its aim is to elucidate the mechanical methods by cases which happened in the experience of the author, and to give such practical hints as will facilitate the execution of the various manipulations. After discussing the physiological effects of massage and of gymnastics, it defines the diseases to which mechano-therapy is applicable. Among the more common diseases which are amenable to its influence are sciatica, cervico-brachialgia, trigeminal neuralgia, myalgia, torticollis, sprains, chronic catarrhal gastritis, phthisis, neurasthenia, etc.; a number of which are illustrated by the citation of interesting cases.

It is to be regretted that the author does not even refer to probably the only scientific physiological work which has been done to show the effects of massage on the exhausted muscles of frogs. We allude to the interesting experiments which were performed by Zabludowski in the Berlin physiological laboratory, under the direction of Prof. Kronecker, and which were published as long ago as 1883.

With this omission, the work, so far as we can see, is one which meets every indication, and we can frankly commend it to the profession.

SOCIETY PROCEEDINGS.

AMERICAN NEUROLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Long Branch, N. J., July 21, 22, and 23, 1887.

Specially reported for THE MEDICAL NEWS.

(Concluded from page 194.)

FRIDAY, JULY 22D.—MORNING SESSION.

DR. ISAAC OTT read a paper on

THERMOTAXIS.

He called attention to the increase of temperature upon nerve irritation, and after the administration of atropia, and to the rise of temperature in cases of tetanus and convulsions.

DR. SPITZKA mentioned two cases of chorea, the temperature in one case rising to 104° and in the other to 107°; he could not account for the rise except by the strong muscular action exhibited. He had also seen a fatal case of chorea in which the temperature was 103°.

DR. C. L. DANA reported

A CASE OF ANENCEPHALIA ILLUSTRATING THE SENSORY TRACT.

The case was that of a male child born at full term, weighing 8 or 9 pounds; there was no deformity, except that the head was rather peculiar, being very long and narrow; the bones were freely movable, the eyes were kept closed; the child died on the second day. At the post-mortem a yellowish fluid squirted out from the brain, the first nerve was not fully developed, the arterial supply was inferior and undeveloped in some of its branches, the pons Varolii was small, as was also the spinal cord.

DR. GEORGE W. JACOBY, of New York, presented a paper on

THE TREATMENT OF NEURALGIAS BY MEANS OF INTENSE COLD.

He said that our methods of applying cold therapeutically have been revolutionized by the introduction into use of chloride of methyl. Since Debove first recommended this agent in 1884, he had given considerable attention to the therapeutic action of the various refrigerants, and had come to the conclusion that we possess only two which can be easily and practically utilized—the chloride of methyl and fluid carbonic acid. By chloride of methyl he has treated five cases of trigeminal neuralgia; three of from one to five weeks standing, one of six months, and one of twenty-seven years duration. In all the pain was entirely relieved after the first application. In two of the recent cases the pain returned; a second application was made and a cure resulted. In one of the other cases the pain was so much ameliorated after four applications that the patient discontinued treatment, although not entirely well, but in the fifth case he was able only to obtain relief from pain, and, although six applications were made there was no sign of permanent improvement. His conclusion is that we have in the chloride of methyl a reliable analgesic, which does not affect the general condition of the patient, and that it is invaluable in the

treatment of neuralgias for the immediate relief of severe pain.

He has used the carbonic acid in ten cases of sciatica, and he finds that it is a good substitute for the chloride of methyl so far as relieving the pain is concerned, but that its curative effect is not so great.

Dr. Charles K. Mills presented

NOTES OF SOME CASES OF MULTIPLE NEURITIS (OR MYELITIS) OF SYPHILITIC ORIGIN, WITH REMARKS ON THE DIFFICULTIES OF DIAGNOSTICATING MULTIPLE NEURITIS FROM SOME FORMS OF MYELITIS.

During the ten years he had been Neurologist to the Philadelphia Hospital, the attention of Dr. Mills had been frequently directed to a certain class of paralytic cases, in which a clear history of either syphilis or of chronic alcoholism, or of both, had always been present. Syphilis and alcoholism were so frequently factors in the production of the organic nervous affections observed at the Philadelphia Hospital, and they were so often conjoined in the history of the same case, that it was sometimes difficult to separate such cases into two subdivisions, one of which represented a type clearly syphilitic, and the other one clearly alcoholic. Sometimes, however, he had been able to do this. He had for presentation the notes of three cases in which the past history of the patient, or the results of treatment, or both, indicated a syphilitic origin of the disease. With reference to alcohol, he said that the cases of the same class clearly due to alcohol alone, presented almost identically the same clinical features as those shown by the purely syphilitic cases. Purely alcoholic cases did not, however, so well respond to specific treatment, and sometimes would not respond at all to such treatment. During the last ten years he had seen at least a dozen cases similar to those to be detailed, cases, the majority of which recovered under specific treatment, with the help of massage, electricity, tonics, and time.

Many interesting questions might be suggested by a study of cases such as these. He had, for instance, often been at a loss, from any known rules of diagnosis, to differentiate clearly their local pathology. They presented such phenomena clinically, that, he had no doubt, in an era of "multiple neuritis" they would be classed as examples of that affection, although almost all, if not all, the symptoms could be easily traced to a spinal lesion. These cases, among others, had led him to a conclusion which he regarded as philosophical, and which he believed was borne out by the facts, namely, that in practice we had frequently not multiple neuritis alone, and not myelitis alone, but a concurrence of these inflammatory conditions in the same case. At a meeting of the Philadelphia Neurological Society, held November 22, 1886, he had presented some remarks on this concurrence, and also upon the concurrence of encephalitis with neuritis or myelitis, coming among other conclusions to the following: We may have—1. Cases of multiple neuritis, pure and simple, but such cases are rare. 2. Cases in which the multiple neuritis is associated with myelitis.

Dr. Mills related the histories of three cases, and then said he desired to elicit a discussion on the differential diagnosis of multiple neuritis from some forms of myelitis, and especially diffuse myelitis and poliomyelitis. The differential features given by Chapin, Starr, and others, he regarded as insufficient. Some of them were misleading. Common both to multiple neuritis and myelitis of the forms indicated were atrophic paralysis, lost knee-jerk, and degeneration reactions, according to the best observers. Pain and tenderness, severe in character, distinctly localized to nerve-trunks and muscles, and the absence of symptoms of paresis or spasm in the bladder and bowels seemed to be the most definite marks of multiple neuritis, but could even these be regarded as positive, or, at least, absolute? It was certainly fallacious to decide in favor of neuritis because of gradual onset, because the cases got well, because the paralysis was progressive and ascending, or because of the presence of numerous and persistent sensory manifestations.

When the nerves and central organs were both involved it was difficult to say which was first involved; there are some forms of these diseases which are painless and others where the pain is great. He considered there were cases where it was impossible to discover whether the disease were central or peripheral.

Dr. Edes said that he reported a case some years ago in which he found symmetrical lesions in the cord; there was the usual amount of asthenia with rapidly advancing paralysis and atrophy below the knees and elbows; the case resulted fatally. He thought Dr. Mills was right, and that these two things may coexist, but whether the degeneration of the cord was owing to neuritis he would not be certain. He thought the tendency was to call these cases neuritis.

Dr. Putnam remarked as to the connection of neuritis and disease of the anterior columns of the spinal cord, the pain felt in poliomyelitis is really of neuritic origin; he made a post-mortem in a case in which the pain was intense with the paralysis at the onset of the disease, although the nerves were not examined he could conceive that there was no doubt that they were affected; the spinal cord was affected throughout the columns, but confined to the gray matter. He had seen cases of pain with a loss of sensibility where the cord appeared to be healthy, but where the brain had spots of softening, and the arteries were greatly thickened in the central nervous system. As Dr. Mills had suggested, the different types differ so strongly that we have to conclude we are dealing with a symptom of disease, and that the spinal cord and peripheral portion are related in some way.

Dr. Lloyd suggested the use of electricity as a means of diagnosis in these cases.

Dr. Starr did not think this means could be depended upon, as the intensity of the disease was so varied. He thought a great many cases of poliomyelitis begin without any sensory symptoms at all, and where they do occur at the beginning, the question comes in as to whether it is not neuritis. He did not remember seeing any cases in which the cord was affected equally on both sides, one arm would be affected more than the other and so it would be with the legs. In multiple neuritis both sides were affected similarly; as a rule, cases that he had seen during the past year followed out that idea. He considered it a mistake to call all cases that recover neuritis; neuritis is not always favorable in its course, but it is more favorable than the other; there is a form of subacute poliomyelitis which may correspond with neuritis, pain and tenderness being points of great value in diagnosis.

DR. DANA considered alcoholic paralysis to be multiple neuritis; in these cases he had found the greatest variety of symptoms; in those cases of alcoholic neuritis we find neuritis alone, and in myelitis, myelitis alone, but cases have been reported where they have been combined.

DR. MILLS by no means asserted the constant coexistence of the two diseases, but his desire was for the Association to discuss the different diagnostic points; he did not think electricity, as suggested by Dr. Lloyd, would be of great value; he felt convinced that poliomyelitis began with sensory symptoms at times but that the cord in these cases was attacked by a more general inflammation which limited itself in time to the horns.

DR. E. D. FISHER, of New York, reported

A CASE OF BULBAR PARALYSIS

in a young married woman who had been under his care for a year and a half. The expression of the face then was characteristic of the disease, the lower lip hanging down and saliva flowing from the corners of the mouth; the tongue was small and atrophied and she could swallow with difficulty; examination of the larynx was almost an impossibility; reflexes were normal, the disease being confined to the hypoglossal and lower portion of the facial nerve; speech at length became utterly impossible. The mind was not affected, but the patient was very excitable and emotional. Emaciation then commenced; deglutition being extremely difficult, her food was confined to fluids. At night severe attacks of dyspnœa appeared, the patient being unable to cough. At the autopsy the floor of the fourth ventricle, the region over the hypoglossal nerve, was small and pale, the specimen after hardening showing an almost entire disappearance of the cells; the facial nerve was not involved in a marked degree.

He thought the disease was probably induced by a defective blood supply in its early stages, and increased supply of blood to the parts later, but of a non-inflammatory nature, its purely local character being due to the arterial distribution of the parts.

The Association then approved of the scheme for the

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS,

and Dr. Landon Carter Gray was appointed its representative in the Executive Committee of the Congress, and Dr. Charles K. Mills alternate.

The following were then elected

OFFICERS FOR THE ENSUING YEAR,

President.—Dr. James J. Putnam, of Boston.

Vice-Presidents.—Drs. Wharton Sinkler, of Philadelphia, and B. Sachs, of New York.

Secretary and Treasurer.—Dr. Graeme M. Hammond, of New York.

Councillors.—Drs. George W. Jacoby, of New York, and Robert T. Edes, of Washington.

The Association then adjourned.

CORRESPONDENCE.

LETTER FROM LEIPZIG.

Sänger's Performance of Laparotomy—Lacerated Cervix in Germany.

Although the months of July and August are held as holidays in Germany in many departments of the universities, there is yet much to be seen in the line of surgery, and while the auditoriums are not so crowded with students, the professors still continue to operate, and, with the exception of a short holiday, which is very apt to fall in August, they devote much time and courteous attention to their visitors, especially if they are specialists seeking information. Within an hour after my arrival at Leipzig I was fortunate enough to see Dr. Sänger perform two laparotomies, one for tumor of the gall-bladder, and the other for cystic tumors of the broad ligament and ovaries.

The *technique* was perfectly aseptic, and conducted in a manner with which we are all now familiar, insuring the regular and perfect recovery which usually follows.

The gall-bladder had formed a large retention cyst, the stoppage being due to an unknown cause. This cyst was first stitched carefully to a short vertical incision at the outer margin of the right rectus by the navel, and was next, after the formation of close adhesions shutting off the remainder of the peritoneum, which occurred in six days, opened by Paquelin's cautery.

One of the cystic tumors was parovarian, the size of a small cocoanut, and the other a small dermoid cyst of the left ovary. The incision was made long enough to slip the larger cyst out intact; the pedicle was tied by transfixion, and again a separate ligature was thrown around the whole stump. Both stumps were treated in this way, and the cut surfaces carefully burned with Paquelin's cautery. This last procedure is followed as an antiseptic measure and one greatly limiting the amount of exudation.

I was particularly interested in the method of tying, as it is exactly that which my own experience has taught me to adopt. The dangers of immediate hemorrhage in a tie which pulls up the broad ligament in the shape of a cone are greater than is generally believed to be the case, and a transfixed tie seems peculiarly liable to inversion. This may result more from a tendency to cut the stump cup-shaped rather than from any mechanical difficulty. I am, however, sure that the two ties combined afford the utmost possible safety in the case of a broad pedicle tending to roll out.

The tie used by Prof. Gaillard Thomas is employed in Germany also, and though in some respects similar, is practically different, the method here used possessing a distinct advantage in that the last tie is accurately applied in exactly the most convenient place for the thread to hold securely, and is conveniently added just before dropping the pedicle.

Our workers at home will be both surprised and pleased to hear that "laceration of the cervix uteri" has at last found here an advocate in Dr. Sänger, who fully understands the subject in all its bearings. Although this is one of the minor operations in gynecology, and one indeed which at home has been much injured by the *furor operativus*, one first realizes in coming abroad what a world of good the operation is capable of doing, and what a vast field is open for it in Germany, England, France, and Italy. While last year I was shown well-marked lacerations with extensive eversion of the cervical mucous membrane labelled "erosion," I now see cases which have been very neatly operated upon and *cured*, and I see still others in process of preparation for operation, and hear remarks upon the *rarity* of real erosion.

The same misunderstanding is general in Great Britain, and was especially apparent at the meeting of the Gynecological Section of the British Medical Association, at Brighton, in 1886.

Nothing better defines the great difference between the practice of forty years ago and to-day in America, and the great steps we have taken in the advance in practical surgery, than this very subject of lacerated cervix. Twenty years ago, the "erosion" which was so universally found and so invariably accompanied by other signs of disease, was treated directly by cauterizing and destructive agents of various sorts; and one saw in consequence (in fact, sees yet) the well-known small, hard, gristly cervices, in which the canal could scarcely be found, or even penetrated by a bristle. Yet it is a tribute due to our predecessors to acknowledge that, on the basis of a false pathology, they still often attained by their practical genius excellent results. By the nitrate of silver method, especially, the great, spongy, infiltrated lips were thus destroyed and shrunken, and the patient often relieved. Now the tedious, uncertain, and, in case of consecutive pregnancy, even very dangerous, method has been, in America, replaced by the rational preparatory treatment and the rational operation—thanks to Dr. Emmet; and the stimulus this one simple procedure has given to the present careful investigation and rational treatment of all other gynecological subjects, cannot be overestimated.

In Germany the matter has, however, taken another and truly a very remarkable form. In the first place, the relation between epithelial proliferation and cancer everyone knows, and the tendency of epithelium to grow in places where it is not normally found, or to invade tissues more deeply than normally, is naturally to be dreaded. In the second place, on the "erosion" (lacerated cervix) we find glandular epithelium, which belongs *inside* the cervix, extending *far outside* toward the vaginal wall (in consequence of eversion). Couple these two facts with a third, the frequency of cancer of the cervix, and we have in this apparently misplaced epithelium the simplest and most reasonable explanation possible of the origin of the *epithelioma cervicis*. Here, again, we must pay a tribute to the practical genius of our coworkers, relative to their treatment of the difficulty, holding, as they do, such etiological views. The operation prescribed for such an "erosion," which "may be now just passing into cancer," is *amputation*, and that is the reason why we see so many amputations of lacerated cervices in Germany. But this *amputation* is usually only one *in name*, being in reality a skilful *resection* of the diseased mucosa, such as we might ourselves occasionally practise, where the mucous membrane is infiltrated and diseased beyond hope of rejuvenation. The cervix is, by this procedure, somewhat shortened, but never cleaned off to the extent I have seen in amputations by the wire cautery.

A few students are in Leipzig attending the summer course in the Entbindungs Anstalt, under Prof. Zweifel, with the valuable assistance of Dr. Döderlein; others are availing themselves of the opportunities afforded in the Poliklinik, under Dr. Sänger, where a rich material and the wonderfully clear teaching of one of the best gynecologists in the world give all an inquisitive mind could ask.

HOWARD A. KELLY.

Leipzig, July 19, 1887.

IPECACUANHA IN LABOR.

To the Editor of THE MEDICAL NEWS,

SIR: Under this title an editorial in THE NEWS of July 23d, contains the following: "Carregei, in the *Revue Medico-Chirurgicale des Maladies des Femmes* of May 25th, states that from the remarkable influence ipecacuanha has over uterine hæmorrhage he has been led to employ it as an oxytoxic." And it is there remarked that the practice is by no means new, though the quantity of the medicine is much less (a grain and a half to three grains) than that heretofore employed; and reference is made to the use of the nauseating influence of ipecac in a rigid os thirty years or more ago, with the comment that it will be a great gain if so simple a remedy in such a dose will shorten the time and diminish the intensity of the suffering.

This is a curious illustration of a certain periodicity that sometimes involves and reiterates medical knowledge, and especially of the failure of a prophet to receive honor in his own country.

In the *New York Medical Journal* for November, 1878, Dr. John H. Carriger, of Knoxville, Tenn., published an interesting article, illustrated by cases, on "The Use of Ipecacuanha in Labor," where he reached the conclusion that it is "a potent and reliable uterine motor stimulant," and that its influence over uterine hemorrhage is not, as sometimes taught, "due to sedation upon the heart and arteries, . . but to its power of coördinating uterine action and stimulating tonic contraction." He believes that it exercises "coördinating influence over that condition of the uterus in which we have irregular uterine action," and further that under its use there is "a general contractility of the non-striated tissues, [and] a contraction of the capillaries as well as of the uterine tissues." He gave in labor cases two grains every thirty minutes, and had followed that practice since 1851.

This paper does not appear to have attracted much attention in this country, but in the *Virginia Medical Monthly* for February, 1880, there appeared as an original translation this extract from the *Revue des Sciences Médicales* (number and page not given): "Dr. Carriger employs ipecac for its speedy action in hemorrhage during and after parturition. He says it is a powerful drug in stimulating a weak labor and in relaxing rigidity. It also hastens labor by increasing the pains. A long labor has been speedily terminated by giving from 10 to 20 centigrammes (15 to 30 grains) of powdered ipecac." Here there is an evident error in misplacing the decimal point and then translating from that—the true dose being 1.5 to 3 grains.

I have the impression that I have seen in another American journal, a translated extract on this subject from the French of "M. Carriger," but the reference is mislaid.

In the *New York Medical Record* for June, 1882, Dr. L. F. Pitkin writes that having had his attention drawn about two years before by "an article written by a Southern physician," he has used ipecac "in several cases where the pains were irregular and the os rigid and undilatable, and always with benefit." He thinks it has a specific effect on the rigid os uteri, softening and relaxing its fibres as well as having a coördinating influence on the irregularly contracting uterine muscles,

causing them to act in harmony." He reports the details of one case where he used five grain doses with success.

An examination of the original in the *Revue Medico-Chirurgicale* makes it evident that Drs. Carregel and Carriger are identical and that the French journal is still using the material of the Knoxville physician. It would be interesting, if practicable, to follow the course of the quotation to and fro, but it would certainly be all traced in the end to the single authority.

My own interest in this matter lies in the fact that in 1876 I published my belief that ipecac is essentially a stimulant to the organic nerves and that its emetic qualities are incidental—an opinion which Dr. Carriger appears to have reached independently. In a very limited obstetric practice I have since followed his advice and always with satisfactory results.

Renewed attention is now invited to this use of two-grain doses every twenty or thirty minutes when the os is rigid and the pains irregular and ineffective. Under the circumstances it will almost certainly be found a trustworthy uterine stimulant, and by a wider experience the exact therapeutic value of the drug may be established. Respectfully,

Alfred A. Woodhull,
Fort Leavenworth, Kan., Surgeon, U. S. Army.
August 6, 1877.

NEWS ITEMS.

Rags and Infectious Diseases.—From the report on the "Transmission of Infectious Diseases Through the Medium of Rags," by Dr. C. F. Withington, incorporated in the Eighteenth Annual Report of the State Board of Health of Massachusetts, we take the following conclusions:

1. Smallpox has been transmitted through the medium of rags in a certain number of cases, small in proportion to the whole number of persons who handle rags, but absolutely numerous enough to show that unvaccinated workers in rags are exposed to an actual, if not imminent, danger of infection from this source.

2. The source of this infection is more frequently domestic than foreign rags, though the disease has been caused by the latter. This possibility of infection through imported rags accords with what is known of the tenacity of life of the variolous poison.

3. Among the rarer means whereby cholera is transmitted, are textile fabrics infected with choleraic discharges. There is evidence that clothing from cholera patients, and possibly clothing merely packed in an infected locality, has, when transported to a distance and there unpacked, caused the disease in those who have handled it, thus starting a fresh cholera focus. A proper distinction exists between clothing, on the one hand, recently removed from the body and again not long after to be put on to the body; and rags, on the other hand, which, if transported to this country, are certain to have undergone a carefully discriminative sorting and drying, and to have spent a considerable time in warehouse and on shipboard.

4. The statement that cholera has been transmitted by paper rags, rests upon a solitary case, of which the details are not complete, and on the reliability of which some of the highest authorities on cholera have cast doubt. If the case be accepted, it is one of infection by *domestic* rags, carried only fifty miles from their place of collection.

5. An epidemic affection known as "rag-sorters' disease," appears to have broken out on three or four occasions in European paper mills. It was probably, though not certainly, the disease called anthrax.

6. Authenticated instances are not to be found in which the other infectious diseases—typhus and typhoid fevers, scarlet fever, measles, and diphtheria—have been transmitted through rags; though it is to be said that such evidence, supposing the fact to exist, would be very difficult to get. Neither do the mortality tables, as shown by registration reports, show a preponderance of deaths from these diseases in the paper-making towns.

7. There is no evidence to show that rag-sorters as a class are, except for occasional cases of smallpox and a certain amount of pulmonary irritation from the dust of improperly ventilated rooms, less healthy than other persons engaged in indoor manual occupations.

8. Despite the fact that cholera is not known to have ever been conveyed to this or any other country in foreign baled rags, it is a reasonable precaution to prohibit the landing in any United States port of rags gathered in epidemically infected localities, in view of the possibility that among such rags there may have been thrown articles of infected clothing which have not been sufficiently dried and aired, or have not occupied enough time in their transportation to be devoid of danger. Such prohibitions should be limited to the time and place of epidemic infection; but all necessary precautions should be taken to make sure that rags shipped from a healthy port were not gathered or baled in an infected place.

9. As the only safeguard against the occurrence of smallpox among operatives, paper-mill owners, whether "incorporated companies" or not, should make evidence of successful vaccination an absolute prerequisite to the employment of any person in the mill, and a revaccination at regular intervals (not merely on the occurrence of an epidemic in the neighborhood) a condition of being retained in their employ.

10. As the contagion of smallpox, phthisis, and perhaps other diseases, is capable of being inspired when the particles carrying it are suspended in the air in the form of dust, and as dust, even when it carries no contagion, is irritating to the respiratory passages, every mill should have, in connection with each table in the rag room and in the dusting room, a ventilating system, preferably consisting of flues connected with an exhaust fan, so that the dust, as fast as it is disengaged, may be withdrawn from the air. The success which attends the working of such an apparatus in some mills where it is in use, is a sufficient warrant for its general introduction.

11. A law similar to that of Great Britain, imposing a penalty on the selling or giving away of infected rags from persons sick with any dangerous disease, seems desirable. Public institutions and private householders should be obliged (and not as at present, simply advised) to insure the disinfection of the more valuable articles, and the destruction by fire of all rags that have been thus exposed.

12. As domestic rags comprise more than half those used, and represent a still larger proportion of the infection likely to be carried, it follows that they should par-

ticipate in whatever disinfection is thought necessary. This fact points to the paper mill as the proper place for making such disinfection. The sulphur process would, doubtless, afford the least embarrassment to the manufacturer; the bales being opened in a tightly closed room, the rags being spread on racks, and sulphur burned in the proportion of two pounds to each one thousand cubic feet of space. The introduction of steam under pressure, the rags being similarly disposed, would be the most effective disinfection possible, but would dampen the rags to their injury, unless the moisture were dried out at once with a current of hot air.

Hospitals for Contagious Diseases.—We have several times had occasion to call attention to the importance of providing special hospitals for the treatment of those forms of contagious disease in which isolation and disinfection are of special importance. The Municipal Council of Paris has been leisurely investigating this subject for the last three years through a committee, in behalf of which Dr. Chantemps has recently presented a report which is of interest in this connection.

It is certainly time that Paris should take some steps to diminish the proportion of contagious disease which seems of late years to have been increasing within her boundaries. The only special accommodation for such diseases which she now has consists of two barracks for smallpox, one connected with the hospital St. Antoine, and containing seventy-two beds, the other at the hospital St. Louis, containing sixty-four beds.

Nor can the methods actually in use in Paris for dealing with contagious disease be considered as at all satisfactory.

Theoretically, there is a very good set of rules and regulations for such cases, but practically they are not carried out. For example, the total amount expended during 1885 for the disinfection of infected localities was $163. Disinfectants are stored at the police stations and in the municipal laboratory, but they are not used.

Dr. Chantemps proposes that two special smallpox hospitals shall be constructed, one for the northern and the other for the southern portions of the city, the two to contain 300 beds. It is also advised that two special wards for diphtheria cases be arranged in the two chief hospitals for children, at which also separate pavilions for scarlet fever and measles should be provided. Two stations for ambulances to convey contagious cases to hospitals are to be provided, each to have six separate compartments, in each of which two ambulances are to be kept. The vehicles in each division are used for cases of one disease only, the diseases thus provided for being smallpox, measles, scarlet fever, diphtheria, whooping-cough, and miscellaneous skin affections. There are also to be provided two disinfecting stations, with the usual apparatus for the use of superheated steam, etc. It will be seen that what is recommended is really needed for such a city as Paris, but it is doubtful whether anything will really be done until the stimulus of an epidemic compels attention to the matter.

While most of our large cities are better provided with means for circumscribing and destroying infection than Paris is, and make more use of them, it is, nevertheless, true that the majority of our cities of from ten to forty or fifty thousand inhabitants have no sufficient hospital accommodation, means of transportation, or disinfecting apparatus for dealing with contagious disease, and that until they are provided with these the efforts of health officials to control the spread of such disease must be of comparatively little use.—*Sanitary Engineer*, July 16, 1887.

Pasteur's Remarks upon His Recent Election.—On the occasion of his practically unanimous election to the Permanent Secretaryship of the Academy of Sciences, Pasteur said that he wished "to devote what remains to him of existence to two purposes: one, to institute researches and to train students full of promise in a manner worthy of French science; the other, to follow attentively the work which the Academy institutes and encourages."

The Decomposition of Wood Dependent upon Living Organisms.—*A propos* to our knowledge of decomposition in animal tissues as caused by living organisms is the following, from the *Sanitary Engineer* of June 11, 1887:

Prof. A. H. Church, in a recent lecture on "Wood, Its Chemistry, Its Decay, and Its Preservation," thus alludes to the use of paraffine as a preservative of wood: "It is now believed that wood does not decay simply by the action of moisture and air, unless the germs of living beings are also present, and that is the reason why the three classes of materials which prevent decay have been found to be effective. Some of these agents altogether exclude air and water, and are termed hydrofuge substances. A coating of excessively hard paraffine, melting at a temperature of 150° Fah., excludes all the germs of those minute organisms, and prevents decay. Paraffine is absolutely indestructible, and is unaffected by alterations of temperature or exposure, consequently it offers one of the best materials for the treatment of wood in cabinet or joinery work; and although it slightly increases inflammability of the material for floors and parquetry, nothing is better than paraffine." He then mentioned substances which prevent the decay of timber which he termed of the poisonous class. "Air and moisture may be permitted to penetrate the wood, but by putting minute quantities of chloride of mercury, carbolic acid, acridine, cryptidine, or naphthaline into it, the timber will show no alteration, except that the coloring matter is changed, until the preservative substance has escaped. Then there are substances which are non-poisonous, and not hydrofuges, but which yet prevent decay and paralyze the organisms. A small quantity of the vapor of chloroform, and many other substances, are, without being actually poisonous, able for a time to prevent the decay of wood. On all grounds, therefore, the conclusion was reached that timber decays on account of the presence of living organisms, and not by direct chemical action."

Photography by Vital Phosphorescence.—Dr. John Vansant, in the *St. Louis Photographer* for July, 1887, calls attention to the curious fact that the kind of light given out by certain *animal organs*, and which evidently in its causation has some close relationship to the nervous system and vitality of the animal, and can bring about incipient decomposition in a haloid salt of silver. Moreover, it can do this through a sheet of glass of the usual thickness used for photographic nega-

tives, and, consequently, there is a possibility of producing by such light photographic positive prints.

The following experiment, copied from his notes, proves this: June 8, 1887. Just after dark, I took about a dozen fireflies (*Lampyris corusca*), which had been captured a few minutes before on the lawn, and inclosed them in a wide-mouthed vial of some three ounces capacity, having a piece of fine white bobinet (such as is used for ladies' veils) stretched over its mouth in place of a stopper. Inclosed thus, they would frequently emit the momentary flashes of greenish-tinted yellow light for which they are remarkable, though usually only one insect at the same time would flash. Every few seconds one or another would emit its light for a period which I estimated to average in each case about one-half of a second, and the frequency of the emissions could be increased by gently shaking the vial. When not flashing, the under surface of the three posterior segments of the firefly's abdomen, from which the light came, was scarcely at all luminous, but was simply of a bright yellow color. The flashing was plainly under the control of the insect, like its muscular movements. These fireflies are rather less than three-quarters of an inch long, and the segments which become luminous have, altogether, an area of only about one-eighth of an inch square. This flash is, however, quite bright, so much so that fine print can be easily seen when held close to it.

Repairing to my dark closet with the vial of fireflies, I placed it to one side, under cover, whilst I arranged and clamped a very sensitive gelatino-bromide of silver dry plate beneath an ordinary negative picture of a landscape on glass, as for contact printing.

The vial of insects was then inverted over the back of the negative, so that only the fine meshes of the bobinet and the glass of the negative with its gelatine film intervened between the firefly's light and the sensitive bromide plate. I counted the flashes, occasionally shaking the vial and sliding it over the negative, till fifty flashes had occurred.

The vial was then removed, the sensitive plate separated from the negative, and an attempt made to develop the latent image, if any existed. Alkaline solution of pyrogallol was used, and in a few minutes I had the pleasure of seeing a well-marked positive image of the negative picture appear, the plate being somewhat yellow stained, as if from too long an exposure. This was fixed in the usual way with sod. hypo sulph., and is now in my possession—probably the first picture ever *produced by the light emitted from a living animal organism.*

THE PROLONGATION OF HUMAN LIFE.—The last report of the Registrar-General in England furnishes fresh evidence of the steady progress which is making in the prolongation of human life, especially through the influence of the sanitary measures adopted during the last thirty years. The death-rate for 1886 was 19.3 per thousand of the population, which was lower than that recorded in any previous year since the registration system was started in 1837, with the two exceptions of 19 in 1885 and 18.9 in 1881. The mean annual death-rate for the six years since 1880 did not exceed 19.3, which was 2.1 below the mean rate between 1840 and 1880. This means that 339,000 persons in England and Wales were alive at the end of those six years who would have been dead if the rate of mortality which prevailed between 1870 and 1880 had been maintained. The reduction is largely accounted for by the falling off in the deaths from the principal zymotic or "filth diseases," which have sunk from an annual rate of 4.15 per thousand, between 1860 and 1870, to 3.40, between 1870 and 1880, and only 2.43 since 1880. The proportion of infant mortality has also been perceptibly diminished, falling from an average of 149 per thousand births, during the ten years preceding 1880, to 141 in the six years since then. The birth-rate itself last year was only 32.4, which is lower than in any year since 1848, and the natural increase of population by the excess of births over deaths accordingly shows a decline from 375,922, in 1884, and 371,520, in 1885, to 366,138 in 1886.—*New York Evening Post.*

NOTES AND QUERIES.

IS ANTIPYRIN A PROPRIETARY MEDICINE?

To the Editor of THE MEDICAL NEWS,

SIR: Please inform me, through the columns of THE NEWS, if antipyrin is a proprietary medicine or not? Also, if an ultimate analysis has been published, and, if so, what is its chemical formula? SUBSCRIBER.

BARRYVILLE, N. Y., August 12, 1887.

[The preparation and chemical composition of antipyrin are secrets, and it is manufactured under a patent.—ED.]

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM AUGUST 9 TO AUGUST 15, 1887.

MCKEE, J. C., *Major and Surgeon.*—Ordered for duty at Watertown Arsenal, Massachusetts.—*S. O. 181, A. G. O.*, August 6, 1887.

BROWN, H. E., *Major and Surgeon.*—Sick leave extended to August 6, 1887, on account of sickness.—*S. O. 184, A. G. O.*, August 10, 1887.

CLEARY, P. J. A., *Major and Surgeon.*—Ordered to Fort McDowell, Arizona Territory, instead of Fort Assiniboine, Montana Territory.—*S. O. 180, A. G. O.*, August 5, 1887.

MERRILL, J. C., *Captain and Assistant Surgeon.*—Ordered from Fort Klamath, Oregon, to Watervliet Arsenal, New York.—*S. O. 181, A. G. O.*, August 6, 1887.

WILSON, GEORGE E., *Captain and Assistant Surgeon.*—Granted leave of absence for fifteen days.—*S. O. 78, Department of Dakota*, August 8, 1887.

SUTER, WILLIAM N., *First Lieutenant and Assistant Surgeon.*—Ordered to return to Washington Barracks, District of Columbia, on the breaking up of the camp at Creedmoor, New York.—*S. O. 100, Division of the Atlantic*, August 10, 1887.

ANDERSON, C. L. G., *First Lieutenant and Assistant Surgeon.*—Station, Whipple Barracks, Arizona Territory) Ordered to Fort McDowell, Arizona Territory.—*S. O. 81, Department of Arizona*, August 3, 1887.

HOPKINS, WILLIAM E., *First Lieutenant and Assistant Surgeon.*—Ordered from Angel Island, California, to Fort Mason, California.—*S. O. 184, A. G. O.*, August 10, 1887.

MACAULEY, C. N. B., *First Lieutenant and Assistant Surgeon.*—Promoted to be Assistant Surgeon, with the rank of Captain, by operation of law, August 10 1887.

FLETCHER, J. E., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort Monroe, Virginia, to Fort Wood, New York Harbor, N. Y.—*S. O. 180, A. G. O.*, August 5, 1887.

DICKSON, JOHN M., *Captain and Assistant Surgeon.*—Died, August 8, 1887 (station, Fort Mason, California).

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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ORIGINAL ARTICLES.

TWO GENERATIONS OF HEREDITARY OR CONGENITAL ATAXIA: A CLINICAL CONTRIBUTION.

BY WM. M. MASTIN, M.D.,
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FELLOW OF THE AMERICAN SURGICAL ASSOCIATION, ETC.

TYPICAL examples of hereditary or congenital ataxia, also designated as Friedreich's disease, are to be regarded of rare, or at least, not very frequent occurrence in the clinical records of general ataxic disorders. For, with the exception of certain well-known instances, the greater number of such recorded cases, although doubtless rightly classed among this variety of motor spinal affections, are, in many instances, lacking in some important or essential characteristic,—most frequently the distinctive feature of a clear hereditary or congenital history, and consequently fail to group together that full complexus of symptoms claimed to be representative of a separate form. Therefore, cases possessing these requisite qualities cannot be otherwise than of decided professional interest, and my purpose in this paper is simply to narrate the history of a family, embracing several cases, and extending through two generations, recently coming under observation, which seem to furnish all the necessary symptoms illustrative of this type of ataxia.

The facts and data relative to the history of the *older* generation were obtained from the brother-in-law (being also the father and uncle of the cases now living), an intelligent gentleman, whose statement throughout was clear and explicit. For the opportunity of making a careful and thorough personal examination of the cases constituting the *present* generation, together with the necessary information concerning their previous history, I am indebted to the late Dr. Joseph H. Hamilton of this city, under whose constant professional care they have been from birth, and who was able, therefore, to detail every phase in the progress of the disease from its incipiency to the present time.

Under these circumstances, I offer the following histories as constituting a complete chain of valuable and unbroken facts.

Going back three generations I learn that the grandparents of the present (third) generation were blood relatives, being first cousins. They were of French descent, were born in New Orleans, where they resided until early adult life, and then after marriage moved to Mobile. Both were vigorous and healthy people, without nervous troubles or any known hereditary tendencies, and d ed from ordinary causes at somewhat advanced ages.

FIRST GENERATION.—The result of this union was two sons and five daughters. The latter were all comparatively healthy, well-formed and well-grown, and active physically and mentally. With the two sons, however, the nervous affection first showed itself, although the manifestation of identical phenomena in these two members of the same family of children, together with its transmission through two others (sisters), as shown further on, indicates conclusively a marked and distinct hereditary influence.

CASE I.—Patrick, the eldest son, was the second child, and was born at term. He was a brunette in complexion, and up to the age of fifteen years was a vigorous, robust, healthy, and active boy. At this age, however, certain nervous symptoms began to be observed, which, at first, were characterized by an awkwardness and unsteadiness in using his legs and feet whilst walking, a shuffling and tottering gait, dragging his feet, and not lifting the toes clear of the ground, and consequently frequently stumbling and falling. Standing erect also became difficult. He complained of weakness of the entire limbs, especially the knees, and difficulty in rising from the sitting or recumbent postures. A "dropping down" of the feet when the leg was crossed, was a very noticeable feature. These symptoms progressed steadily and uninterruptedly from bad to worse, until finally the upper limbs were invaded, and after only a few years he became completely ataxic. There seems to have been no pain, or other sensory disturbance; vision and hearing were apparently normal; mental condition slightly, but not decidedly dulled, but his speech was slow, and he possessed an ungovernable temper. Notwithstanding medical attention, the disease marched steadily on, ending in a state of absolute helplessness, and he died from a general wearing out, as it were, at the age of thirty years.

CASE II.—The other son, Dominick, was the third child, and next to his brother Patrick. He was of a decided brunette type, and as a little boy, enjoyed excellent health, being about as active as children of his age. The origin, symptoms, and course of the malady with him were almost the exact counterpart of those exhibited in his brother's case. It began to be noticed at a somewhat earlier age, however, first affecting his locomotion at between the years of twelve and fourteen. It progressed with comparative rapidity, without any tendency to arrest, and finally reduced him to the pitiable state of a paralytic. The upper extremities became involved in a very few years after the initial symptoms, although with awkwardness and much effort he possessed sufficient control over the arms and hands to enable him to indulge in occasional clock repairing, and work of like character. He was of a violent temper,

but his mind was moderately bright, and he possessed considerable mechanical ingenuity. Vision and hearing were apparently good; general health excellent; he was well-nourished, and there was no evidence of any further trouble or derangement, except the progressive paralysis. He died in his twenty-eighth year, at which time he was unable to walk at all, and indeed could not even stand without assistance.

Second Generation.—The oldest sister of these brothers, who was also the eldest child, was always strong and active, and is still living in perfect health. She married Mr. K., a healthy man, and has several daughters and one son.

Case III.—This son began to develop at an early age, about the tenth year, symptoms very similar to those shown by his uncles, namely, unsteady and awkward gait, a want of activity, frequent tripping and stumbling, and fatigue in walking, or after any moderate exertion. These symptoms, however, have not made any decided progress or change in the last few years, and he is now able to follow a non-active avocation.

I did not succeed in making a personal examination of this case, but obtained these data from the family physician.

The most important and interesting cases of the group are the sons of the other sister through whom the heredity was transmitted. This lady was the youngest child; was born prematurely (seventh month), but was healthy and vigorous. At the age of eighteen she married Mr. F., a strong, hearty man, with no hereditary or other history of taint, although he indulged afterward for many years in strong drink, then reformed, and is now a religious enthusiast. It should be mentioned, also, that she became addicted to the use of both alcohol and opium. Her husband states that she was a strong, hale, vigorous woman, but was clumsy, slow, and awkward in her movements, and had noticeably long limbs.

She gave birth to sixteen living children at term —six sons and ten daughters—and two miscarriages, and died of uterine cancer when forty-nine years old. Of these children, one daughter died at sixteen years of age of typhoid fever; another daughter fell a victim to smallpox in her eighth year, and five others succumbed in early infancy to intestinal disorders. Three of the sons also perished in infancy from enteric troubles, being bottle-fed, but were well formed and vigorous children. Consequently, there are now living three daughters, who are in vigorous health, and three sons, all of whom are the subject of the affection under consideration, and whose histories are detailed below.

Case IV.—Willis, male, brunette, height five feet six inches, was the eldest child, and born in 1855. His birth was perfectly normal; was suckled at the breast, and grew up a healthy, active, and vigorous child until between the years of ten and twelve, at which age he began to lose his activity, and his gait was noticed to be awkward, uncertain, and unsteady. This was soon accompanied by frequent stumbling, the smallest obstacle serving to occasion him a fall, together with great muscular weakness, and fatigue in walking. As the trouble progressed these difficulties increased, and, in addition, especial trouble was experienced in rising from the sitting or recumbent position; and then, when his feet were gained, he was able, with a separation of his legs and the support of a cane, to maintain the upright attitude, and walk in the shuffling, ungainly manner above mentioned. He complained of particular weakness in the legs, and in walking the feet were stamped, or placed "flat" on the ground, and dragged the toes in lifting them for a step. All movements were slow and deliberate, with an air of hesitation and uncertainty about them. Mind dull, but no actual mental deficiency, and disposition gentle and patient. Arms first showed involvement about seven years ago.

The malady has steadily progressed until when I first saw him (1885) he was unable to rise from his chair, and could not stand unless firmly supported. The upper limbs were likewise almost useless; his grasp was exceedingly feeble; there was inability to handle easily small objects, and in placing the finger on the nose, or carrying a glass of water to the mouth, the arm was slowly and tremblingly brought around in a wide circle, and supported near the wrist by the opposite hand. The entire muscular system was wasted and flabby, but the thighs and arms, in comparison with the forearms and calves of legs, notably so. When the leg was crossed "foot-drop" was marked. There were no contractures, no joint or bone changes; action of sphincters sufficient; taste natural and digestion good, with the exception of constipation. Both hearing and vision apparently normal, and ocular movements natural. Knee-jerk abolished on both sides. There had never been either pain, anæsthesia, or numbness, and the tongue was protruded slowly but without tremor.

He had always enjoyed excellent health, and never suffered from any illness, except once about ten years ago. This attack was of a tetanoid character, and bore a striking resemblance to chronic tetanus, first affecting the muscles of the neck, and then those of the shoulders and arms, and lasting, notwithstanding medical treatment, several weeks. This then gradually subsided, leaving all the limbs, especially the upper, weaker, and with less coördination.

In the last few years his intellect had grown somewhat impaired, and now his speech was slow and hesitating. He remained in about this condition until September, 1886, when he contracted a slight cough. This continued for a day or two without any other observable symptom, when suddenly he became comatose, with dilated pupils; cyanotic; rapid, shallow respiration; small, wiry pulse; complete abolition of sensation and all reflex action, except slight effort to cough, and died after an illness of sixteen hours.

No post-mortem permitted.

Case V.—Ervin, the third child, was born in 1860. He was a strong, vigorous infant; reared by a wet-nurse, and remained healthy and active until ten years old, when the first nervous symptoms were observed. These were very similar to, and progressed exactly like, those with his older brother, namely, unsteady and awkward gait, frequent stumb-

ling, fatigue in walking, and general lack of power in and control over the legs. This incoördination has advanced slowly up to the present time, when my examination now shows his condition to be as follows:

Aged twenty-eight, height five feet two inches, decided blond, rather small frame, square shoulders, and when dressed his chest appears large for the rest of his body. Head large and symmetrical; face well-featured and intelligent. Speech naturally quick and without hesitation. Appearance of face indicates moderately good nutrition, but palpation shows muscular wasting. This is decided over scapular regions, arms, and thighs; but the muscular groups forming the calves of legs and forearms, although not normally full developed, are much larger and firmer in proportion than the thighs and arms. Abdominal muscles also large. Marked antero-posterior with slight lateral curvature of spine—a line dropping from the seventh cervical vertebra falls wide of the sacrum. No osseous lesion, hence curvature is evidently muscular. When erect this gives him a "sway-back" appearance. No trophic disturbances—joints and bones normal.

Locomotion is effected in a winding, shuffling manner, with the feet rather widely separated, and aided by a cane: the body is bent backward, legs separated so as to widen his base, and the feet lifted and swingingly placed on the ground, with a dropping of the toes. The cane held in the right hand is placed somewhat in the rear of the body. The gait, however, is not typically ataxic, the weight of the body seems to be borne rather on the ball of the foot than on the heel, or entire foot, and is characterized as much by a want of power as lack of control, although incoördination is quite marked. He declares that walking is not especially fatiguing, but he evidently remains standing as much as possible to avoid rising and sitting down. Rising from the sitting posture is markedly difficult and awkward, and is accomplished in this wise: First the chair which he occupies is pushed back to the wall so as to gain a *point d' appui*, then the feet are widely separated, and with the hands supporting the body by resting on the knees, the body in this bent-over-attitude is thrown forward to a chair opposite, which is then seized and the body pulled up in a sort of climbing fashion. The act of sitting down is not so laborious, and is accomplished by an awkward side motion—standing at the side of the chair with the hands resting on the knees, and dropping into the seat sideways.

The use of his arms is also very awkward and uncertain. When carrying the hand to the mouth he first raises the elbow from the side, and then in a circling manner advances the hand to the face. He has some skill, however, in the use of his fingers (forearm muscles)—writes a good hand and is a fair draughtsman. When he crosses his knees he has to lift the leg by means of both hands over its fellow. Knee-jerk absent, and grasp feeble. Tarsal arch somewhat exaggerated, and great toes inclining upward, showing slight contracture. When standing with eyes closed and feet close together there is some swaying (Romberg symptom), but he does not fall, although he is timid about this position. Says he has no particular difficulty in walking in the dark. But with the eyes open he stands without oscillation. However, he is so uncertain and tottering on his feet that when not on his guard the slightest jostle will cause a fall. There is no pain of any sort and has never been. No numbness or localized anæsthesia; and no cramps. Sexual ability said to be moderate. Never suffered from any serious illness. Hearing acute and taste normal. Ocular muscles strong and coördinate. No nystagmus. Pupillary reflexes present (no Argyll-Robertson symptom).

O. D. V $= \frac{12}{XII}$.

O. S. V $= \frac{12}{XII}$.

F. normal. Reads J. I. Chromatic sense undisturbed (Holmgren's test).

Ophthalmoscope (without mydriasis) shows in Oc. Dex. clear media. Refraction H. Disk round, clearly defined, slightly whitened or rather grayish at temporal side, but otherwise well-nourished. Retinal vessels natural in size, course, and color. No striations and no splotches. Macula normal.

Oc. Sin. about as on the right side. Media clear. Temporal side of disk perhaps slightly more gray or whitened. Vessels, retina, and macular region normal. Refraction H.

No electrical examination made. His father recognizes a gradual increase in the progress of the malady.

Case VI.—Abraham is the eighth child; born in 1870, and is consequently seventeen years of age. He was bottle-fed, but thrived on artificial food, and until eight years old was as healthy, active, robust, and bright a boy as could be found. At this period, however, the approach of nervous trouble became manifest. This, as with his two older brothers, was first evidenced in his gait—consisting in an unsteady, awkward, and staggering walk, associated with fatigue. These symptoms have gradually become more pronounced, advancing upward, and the implication of his arms dates back about five years.

Present condition (April, 1887): Height, five feet four inches; complexion dark; of rather slender build, but moderately well nourished; limbs disproportionately long; thighs, shoulders, and arms small, but muscles not atrophic. On the other hand, forearms and calves of legs of good size and firm. Grasp very feeble. Of ordinary intelligence, but speech not especially quick. No arthropathic changes. Decided antero-posterior spinal curvature (muscular)—a line from the neck falling outside of sacrum. This appearance of "sway-back" is very marked when he walks. Thorax asymmetrical—right side flattened anteriorly and bulging posteriorly and laterally—but no vertebral disease. Foot well arched, perhaps exaggerated, but no contractures. Neither pain, anæsthetic areas, numbness, nor cramps. Gait staggering, unsteady, and incoördinate—walking in a sort of rocking way, and slinging legs along—and stumbles easily. But it is

much more sure and steady than in the case of his brother. He is able to cross his legs without the assistance of his hands, but he slings them over as if they were dead weight. "Foot-drop" marked. Patella reflex scarcely demonstrable. Standing still with eyes closed and feet together is easily accomplished, but body sways both backward and forward and laterally. No oscillation with eyes open. No difficulty in walking in the dark, except the necessary precaution respecting obstacles, which readily cause stumbling. Walking does not induce marked fatigue. Tongue steady and not ataxic. Hearing and taste normal. Action of the sphincters natural. Rising to erect posture and sitting down are accomplished exactly like the same movements by his brother (Case V.), only to a much less degree. He is able to rise by separating his feet, bending his body forward, at the same time supporting it by his hands resting on his knees, and then by a sudden movement, or rather a jerk, of the body forward, he staggers to his feet. Sitting down is done in the side-way fashion as described in his brother's case. Uses hands with apparent ease and facility, and writes a very good but stiff hand. An attempt, however, to carry his hand to his face, although readily done, is awkwardly executed, the same abduction of the elbow and circling motion of the hand being employed. In a word, all the symptoms are exactly those manifested by his brother (Case V.), the only difference being one of degree, and, therefore, are not so pronounced.

O. D. V = $\frac{12}{xv}$.

O. S. V = $\frac{12}{xv}$.

Irides bluish-gray. F. narrowed. Pupils somewhat dilated, and react feebly to light. Accommodation paretic. Reads J. I, with + glass. Extra ocular movements normal. Chromatic sense natural (Holmgren's test).

Ophthalmoscopic examination without mydriasis. O. D. clear media. Macular region normal. Papilla round, grayish, especially temporal side, with obscure edges and slight retinal striations radiating therefrom, and deep physiological cup. Vessels normal in size, course, etc., after leaving disk. Refraction H.

O. S. condition quite similar to right eye. Disk round, grayish-white, moderately clearly defined, and fine retinal striations. Physiological cup. Media and macula normal. Refraction H.

No electrical examination made. The patient believes that there has been no increase in his symptoms in the last two years, but his father notes a gradual but decided progress.

It is not my intention to discuss the theories involved in congenital ataxia. The subject has received already careful consideration at competent hands; and besides, having in view only a clinical report, it will be unnecessary to examine critically the various symptoms which it presents, either in common with or dissimilar to those of the general form of posterior spinal sclerosis. I do desire, however, to give greater prominence to the special features of the present cases than the mere detail of their histories permits, and to this end will pass in review the several points of interest which they offer.

Among those deserving of mention are:

1. The positive history of transmission which establishes their claim to the title of hereditary ataxia. It is essential that the element of heredity should be distinctly indicated in all these cases of so-called Friedreich's disease; but in the majority of the recorded examples this characteristic is absent or, at least, not clearly traced. They are described rather as occurring in families of the same generation, and, therefore, would be more properly termed family ataxia, or congenital, or perhaps early ataxia. Even the now classic cases of Friedreich are not hereditary, but really belong to the family class. Our own cases, however, are well defined. In them the evidence of transmission is prominent, the affection being clearly conveyed from one generation to another, and including three separate families of children. The absence of this necessary hereditary feature in many instances, would suggest the name *family* ataxia as the most appropriate and descriptive designation to embrace the whole class of this division of ataxia.

2. The affinity manifested by the disease for the male line. It is interesting to note that of the six cases all were males, and this, too, notwithstanding the fact that in each of the branches in which they occurred there was a large number of female children (five daughters in one, four in the second, and ten in the third), but in no instance were the girls affected. Furthermore, the transmission was not directly through the afflicted persons, but took place through two sisters—cropping out in their sons. This is not in accordance with the recent statistics of the disease, which, I believe, point to the female line as most frequently affected.

3. The attacking of *all* the males of the two generations who passed beyond the stage of infancy.

In the first generation there were two sons, and both were ataxic; in one branch of the second generation there was only one son, and he became affected, and in the other branch there were six sons, three of whom were paralytic, the other three, however, dying in early infancy, before reaching what might be called the ataxic period.

4. The steady and uninterrupted progress of the disease. There were no lulls or stationary intervals in the course of the malady, but, on the other hand, its march was even and unbroken. Each month and year brought a definite increase of the symptoms until the affection had attained its height and death terminated it. In the cases living (excepting Case III.) this regular advance is still in progress—the disease now passing through the same characteristic and uninterrupted stages.

5. The identity of the symptoms. The peculiar uniformity in the symptoms presented by each of the cases should not escape mention. Of course, the main features of the disease were necessarily alike, but, in addition, the less important manifestations were so exactly the counterpart of each other that a detailed description of one case would almost suffice for all.

6. The apparently definite duration of the disease.

In Case I., ataxic symptoms were first noticed at the age of fifteen, death occurring in his thirty-first year—a period of a little over fifteen years; in Case II., the disease appeared between the years of twelve and fourteen, and death resulted when twenty-eight years old—also a space of about fifteen years. In Case IV., invasion occurred at the age of between ten and twelve years, thus lasting about sixteen years. Cases III., V., and VI., are still living, their ages being twenty-seven, twenty-eight, and seventeen years respectively, in none of whom has the disease yet reached the length of what, in these cases, would appear to be the average duration of the malady.

7. The comparative rapidity with which the disease spread upward, implicating the arms and superior portions of the body.

This feature is noteworthy in that it is at variance with the usual progress of the ordinary or Duchenne variety of ataxia. In the latter the invasion of the upper extremities is decidedly slow, and, in many instances, they even escape all involvement. In all of the present cases, however, the arms became early and rapidly affected.

8. The ages. Friedreich declared that its appearance was concurrent with the approach of pubescence, but many recorded instances have demonstrated such to be a mistaken belief. In our cases, puberty was certainly neared; the earliest notice of appearance was the eighth year, the others occurring between the ages of ten and fifteen.

9. The absence of pain and other sensory disturbances. This is well exemplified here, being also one of the important and distinctive features of family ataxia, in contradistinction to the invariable presence of the lightning pains and certain other sensory phenomena in regular locomotor ataxia.

10. Spinal curvature was an early and positive symptom in Cases III., IV., V., and, from the description obtained, was doubtless equally so in the other two. Spinal curvature is a frequent associate of this type, and it has been stated that the lateral bend is more often encountered, although the combined lateral and angular is not infrequent. In three of our cases the angular curve was alone present, and in one there was a combination of the angular and lateral. In the other two (Cases I. and II.) antero-posterior curvature probably existed.

11. The moderate wasting of the calf and forearm muscles was well marked. There was, of course, decided nutritional changes in these muscular groups, but, in comparison with those of the thighs, arms and shoulders, the atrophy was noticeably less. I have not seen any reference to this feature elsewhere, but in the present case it was sufficiently marked to furnish ground for comment.

12. In the cases personally examined by me there were no extra-ocular disturbances, and none were apparent to the ordinary observer in the other cases of the group.

Intraocular lesions were undoubted, however, in two cases, and in one of these there was also slight mydriasis, with cycloplegia.

13. The marriage of blood relations. This is not the place to discuss what effects may be entailed upon the offspring resulting from consanguineous unions, or, if such result, the character of these influences. It is only necessary to refer to the fact that, in the present instance, first cousins married. These persons were both vigorous and healthy, and, as far as known, possessed a family history free from all nervous or other troubles. Therefore, it is justifiable, at least, to consider that with this union were brought together or originated those causes which produced the disease, since it was manifested in a progressive and uniform manner in the two succeeding generations.

REPORT OF A TOXICOLOGICAL EXAMINATION OF FIVE BODIES IN CASES OF SUSPECTED SATURNINE POISONING BY LEAD CHROMATE.

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Within the past few months this community has been thoroughly aroused by the discovery of the very extended adulteration of buns and other cakes by certain bakers in the northern section of the city with *lead chromate* (the *chrome yellow* of painters), as a cheap substitute for eggs, on account of the yellow color thereby imparted to the dough. Quite a number of persons have been fatally poisoned through this practice, whilst many others have been seriously affected; and all have exhibited, more or less, the characteristic symptoms of chronic lead poisoning—such as abdominal pains of greater or less severity, nausea, vomiting of greenish-yellow matters, obstinate constipation, pains in the joints, limbs, and head, furred tongue, fetid breath; and in many of the cases severe convulsions, which appeared to be the immediate cause of death. The characteristic blue line at the junction of the teeth and gums was observed in several of the cases, both fatal and non-fatal. A somewhat singular fact relating to the fatal cases is that none of them exhibited signs of paralysis—especially of the extensor muscles of the hands, constituting the well-known *wrist-drop;* whilst, on the other hand, the eclamptic symptoms were more pronounced than is usual.

In one single family—that of the very baker who employed this poisonous adulteration most extensively in his business, and whose "buns" were the means of dealing out death to many others—no less than seven members were affected, all of them fatally. In another neighboring family of nine persons, six had eclamptic attacks, four of whom died.

This system of wholesale poisoning seems to have been going on quite unsuspectedly for some years in that particular section of the city; though subsequently, it has transpired that other districts have been similarly affected. One member after another of a family would fall sick, languish for a longer or shorter period, and finally die. And inasmuch as the convulsions constituted such a prominent symptom—these often coming on suddenly and unexpectedly,—the attending physicians appear very naturally to have been mistaken in their diagnosis, and the unfortunate sufferers were treated for other supposed disorders. Finally, however, in one of the

families above mentioned, after the death of two of the children, Dr. David D. Stewart was called in to visit a third child, fifteen months old, who like the preceding ones, had been suffering from a mild attack of pertussis. This child had a number of convulsions for several successive days, but he finally made a good recovery.

Within a few weeks another child, aged seven and a half years, after some slight general ailing, was suddenly, and without premonition, seized with severe general convulsions, which shortly terminated in coma and death. Dr. Stewart did not see this patient until some time after the first convulsive seizure, and at that time could have no suspicion as to the true origin of these attacks. Four other members of this family were subsequently attacked with similar symptoms—one, a girl of twelve years, fatally, the death being preceded by intense headache and severe continued convulsions.

Very naturally, such a continued series of cases, occurring in the same family, and presenting such similarity of symptoms, led the physician to suspect some other cause than the mere supposed digestive disorder, or the early whooping-cough, to account for these violent and fatal seizures; and by prompt and skilful investigation he was enabled to trace them to their true origin—*saturnine poisoning*, derived through the continued use of "tea" and "cinnamon buns," which had been procured from a neighboring baker, who was in the habit of adulterating his dough with lead chromate as a cheap coloring substitute for eggs!

Dr. Stewart further discovered that this same baker had within the past two years lost a wife and six children in convulsions, and that lead-poisoning had been suspected to be the cause of death in most of these cases; and further, that a journeyman baker in his employ had been seized with lead colic, and been forced to leave him.

Singular to say, although the circumstances attending these different cases were so peculiar and suggestive, the true cause of all this wholesale poisoning was never discovered until Dr. Stewart's thorough investigation revealed it (see THE MEDICAL NEWS of June 18, 1887, p. 676). He took some of the suspicious yellow coloring matter to his friend, Dr. Leffmann, who at once pronounced it to be lead chromate; and who subsequently detected the poison in samples of the "buns" sent to him for analysis.

The matter now fell into the hands of the Coroner. Some autopsies of the bodies had been previously made at different times by the Coroner's physician; but in the absence of any suspicion of lead-poisoning, the mere post-mortem could not, of course, reveal the true cause of death. This officer at once commenced a thorough and elaborate investigation. Four of the bodies of the victims were disinterred. Two of these had been buried about two years; one about five months; and one a little over one month. As analyst to the Coroner, it became my duty to make the toxicological examination of these cases, with the view of discovering the presence of the suspected lead in the remains. Dr. Henry Leffmann, Port Physician of Philadelphia, who had previously analyzed the colored matter found at the baker's, and also some of his buns, was associated with me in this investigation. We made our experiments upon the different viscera conjointly, and always in each other's presence, so as to be able to substantiate the results in every instance. Some of these viscera were in a highly putrescent condition, but were still capable of proper manipulation.

The process adopted by us was the following: The organ to be examined was first divided into fragments and carefully dried by exposure to heat—a process often requiring many hours to accomplish. It was next heated to full redness in a porcelain capsule over a gas-furnace, until it was completely incinerated. This process also was very tedious, often consuming considerable time, and even then, not always attaining the desired end. We found it generally necessary to make several successive additions of small quantities of nitric acid, for the purpose of effecting the more complete destruction of the organic matter. In fact, we ascertained that in a lead-analysis of this character (and the same is doubtless true of copper and other non-volatile metals) it is not sufficient merely to carbonize the material, however thoroughly this is done; but the carbon must be completely reduced to ash, in order to separate the contained metal by subsequent solution in dilute nitric acid. As has been previously pointed out by others, we found that the animal charcoal, under these circumstances, retains the lead with great tenacity, refusing to part with it even when heated in the acid solution. So that, unless special care is exercised by the chemist to insure the *thorough* incineration of this carbonaceous matter, he may entirely fail to recover the poison sought for. As already remarked, this complete incineration required a long and tedious attention on the part of the analyst.

The ash thus obtained was next dissolved in dilute nitric acid at a moderate heat; filtered, evaporated to dryness, and again dissolved in distilled water; it was now ready for the different tests for lead, which gave us the following results:

(1) *Sulphuretted hydrogen* threw down a black precipitate (lead sulphide); this was further corroborated by dissolving the precipitate in dilute nitric acid by the aid of heat; evaporating to dryness; again dissolving in distilled water, and testing the solution by some of the other appropriate reagents, which yielded satisfactory results.

(2) *Dilute sulphuric acid* yielded a white precipitate (lead sulphate), soluble in larger excess of potassic hydrate.

(3) *Potassic hydrate* threw down the white hydrated lead oxide, soluble in an excess of the reagent.

(4) *Potassium iodide* gave the characteristic precipitate of the yellow iodide of lead. This was further corroborated by its solubility in hot water, and by the distinctive six-sided crystalline plates, as seen under the microscope.

(5) *Potassium bichromate* yielded the yellow precipitate of lead chromate.

(6) A fragment of pure metallic *zinc* placed in the solution was speedily coated with bluish colored crystals of metallic lead.

There are a few other tests of minor importance, which we did not deem it necessary to employ.

The following are the actual results of our experiments upon the different viscera submitted to analysis:

Case I.—Amelia D., aged twelve years. Health failing since the beginning of the present year, but only decidedly ill for a few days before death, on May 13th. The only organs submitted to us were a small portion of the upper part of the spinal cord, a kidney, the heart, and the lower jaw. The fragment of the *spinal marrow* (about nine inches in length) examined in the manner above described, yielded traces of lead to several tests. The *kidney* also afforded evidences of its presence by the sulphuretted hydrogen and zinc tests. The *heart* gave no appreciable results; and the same is true of the *lower jaw*. Unfortunately, in this case the stomach and liver had been previously removed.

Case II.—Louisa D., sister of the preceding, aged three and one-quarter years. Had a mild attack of pertussis since January; became seriously ill about January 23d, with vomiting; died in convulsions on January 24th. The viscera submitted to examination were the stomach, with a small portion of the small intestine, one-quarter of the brain, one-quarter of the liver. The *stomach* and fragment of *intestine*, treated as above, yielded evidence of the presence of lead by the sulphuretted hydrogen (corroborated subsequently) and the zinc tests. The portion of the *liver* gave decided results with the sulphuric acid, sulphuretted hydrogen, potassium iodide, potassa and zinc tests. The portion of *brain* afforded us slight, though unequivocal evidence of the presence of lead in this organ, especially by the sulphuretted hydrogen test, subsequently corroborated.

Case III.—George P., aged twenty-four years, died January 23, 1886, in the Philadelphia Hospital after (as was supposed) an epileptic seizure. This was one of the children of the baker above alluded to. The *liver*, which had been well preserved in alcohol, was treated as above mentioned, and afforded most decided evidences of the presence of lead when subjected to the sulphuric acid, sulphuretted hydrogen (corroborated), iodide of potassium, hydrate of potash, and zinc tests.

Case IV.—E. L. P., sister of the preceding, aged twenty years, died December 13, 1885. A portion of the *liver* (one-quarter) was treated according to the before-mentioned method, and yielded on the first incineration no evidence of lead, but only a considerable quantity of oxide of iron. The result of a second and more perfect incineration indicated a slight trace of lead; and one *kidney*, treated as above, yielded very positive indications of lead by means of the sulphuretted hydrogen, potassium iodide, and sulphuric acid tests.

Case V.—Besides the above four cases of the disinterred bodies, there were also submitted to us for analysis some of the viscera of the child A. E. H., aged six and one-half years, who had died quite recently (June 25th) after partaking of "buns" purchased from another baker living over a mile distant from the former one. One-quarter of the liver and spleen were examined together, and the ultimate solution afforded us very positive proofs of the presence of lead in these viscera, when subjected to the above-mentioned tests, especially sulphuretted hydrogen, potassium iodide, and sulphuric acid.

The point of most interest in the above cases—physiologically and toxicologically considered—is probably the fact of the detection of lead after death in the two great nervous centres, the brain and spinal cord.

It has been asserted by some who have experimented with this poisonous metal on the lower animals, that it has a special affinity for these organs, and that it was found after death in them in greater abundance than even in the liver. The results of our experiments upon the human subject, as above detailed, do not confirm this statement, but, on the contrary, show that the liver, as a general rule, contains more of the absorbed poison than any of the other viscera; and they point to this gland as the great eliminating organ for poisons from the human body.

It is to be regretted that no opportunity was afforded us for testing the urine in any of these cases. Unfortunately, no test of this secretion was made during life. Doubtless, if it had been done, evidence of the presence of the poisonous metal would have been detected. The examination of the urine should never be neglected during life in a case of suspected mineral poisoning, since its presence in this secretion may almost certainly be discovered, in a genuine case, by the appropriate chemical tests.

INFLUENCE OF TROPIN HYDROCHLORATE AND SODIUM TROPATE ON THE BLOOD-VESSELS OF THE DOG,

ACCORDING TO AN IMPROVED METHOD.

By H. G. BEYER, M.D., Ph. D.,

passed assistant surgeon, U. S. N., fellow by courtesy of the Johns Hopkins University.

By a careful, experimental study of atropine on isolated organs, we have been able to furnish good pharmacological evidence in proof of the fact that this alkaloid exerts a double action on those organs which are supplied by both motor and inhibitory sympathetic nerve-structures. It has been shown that very small doses of the drug will stimulate the motor nerve-elements, and that large doses of it will stimulate the inhibitory portion of the nerve-supply of these organs.

Thus, very small doses of atropine give rise to contraction of the pupil, to acceleration of the heart's action, and to increased peristalsis of the intestine; large doses, on the contrary, produce dilatation of the pupil, arrest the heart in diastole, and stop the peristaltic movements of the intestine.

In view of the researches of Ladenburg, on the chemical constitution of atropine, it seemed to me very desirable to try and ascertain if this double action of atropine could possibly be explained by a careful study and comparison of the action of its two constituents, *tropin* and *tropic acid*.

It will here be necessary to recall briefly a few of the more essential points of interest as regards the chemistry of atropine.

Some years ago, Kraut and Lossen succeeded in splitting up the alkaloid atropine into its two constituent molecules. Lossen, more especially, succeeded in showing that the decomposition mentioned went on according to the following equation: $C_{17}H_{23}NO_3 + H_2O = C_8H_{15}NOC_9 + H_{10}O_4$. Finally, Ladenburg, in 1881, produced atropine by synthesis from tropin and tropic acid, by first neutralizing a solution of tropic acid with tropin, thus producing tropin-tropate; then boiling this compound with a small quantity of HCl in a sealed tube.

The result of this procedure was a substance absolutely identical with atropine obtained in the natural way from the plant, in all its chemical and physiological properties. The chemical identity of this substance was established by Ladenburg himself; the physiological experiments necessary were made by Professors Hensen, Völkers, and Falck.

According to the same method, Ladenburg now undertook the manufacture of certain other substances to which he gave the name of *tropeïnes*, but which are in reality atropines in which the tropic acid molecule was replaced by a molecule of some other suitable acid. Many of these so-called tropeïnes were in this manner produced, but the consideration of a few will perhaps suffice for our purpose. (1) Homatropine is one of the best known tropeïnes, and in it tropic acid has been replaced by amygdalic acid; one of the chief characteristics by which it may be distinguished from atropine is its effect on the pupil, which is much less permanent, though equally as pronounced as, in the case of atropine. (2) Salicyltropeïne, made, as its name implies, by substituting tropic acid by salicylic acid, has, according to experiments made by Prof. Falck, no effect whatever on the pupil; it is said to be a weak poison, affecting especially rabbits very slightly indeed. (3) Oxybenzoyltropeïne has a certain effect on the pupil, lasting, however, but a very short time, and its action is much less pronounced than that of atropine, according to experiments made by Prof. Völkers. (4) Cinnamyltropeïne, made by substituting tropic acid by cinnamic acid, while it was found to be a strong poison, $\frac{1}{12}$ a grain killing a frog in three minutes, had no appreciable effect on the pupil whatever. It will be seen, then, that with the replacement of the tropic acid molecule in atropine by a molecule of other acids, a very decided modification in its effects on the pupil is thus produced, and the inference, therefore, was quite a natural one, that there exists a certain definite physiological relation between this molecule and the dilatation of the pupil.

Active dilatation of the pupil, however, is produced by the stimulation of certain nerve-structures, belonging, according to Gaskell, to the class of inhibitory nerves, considered both physiologically as well as histologically.

From the results I obtained in some investigations on the direct action of the members of the atropine group on the heart and bloodvessels, I was led to believe that they all exhibited a stimulatory influence on both inhibitory and motor nerve-structures. It was found that the administration of small doses of atropine was accompanied by phenomena indicative of vasomotor nerve-stimulation, and that of larger doses by phenomena indicative of inhibitory nerve-stimulation. These results, as well as those obtained by Professors Hensen, Falck, and Völkers, suggested to me the possibility of finding an explanation for this double action of atropine in a further study of the action of its two constituents, tropin and tropic acid.

The pupil did not seem to me a sufficiently typical object for the determination of this all-important point, and I, therefore, concluded to try the bloodvessels, which seemed to me particularly well adapted to this end, since it is now looked upon generally as a well settled question in physiology that they are supplied by two kinds of sympathetic nerve-structures, namely, vaso-motor and vaso-inhibitory, the stimulation of the former causing vaso-constriction, that of the latter giving rise to vaso dilatation.

From what has been said so far, we may argue that if tropic acid is that part of atropine which causes pupillary dilatation, and if we have, furthermore, reasons to believe that tissues which are identical, both in histological structure and physiological function, are also similarly affected by the same chemical stimuli, then certainly it ought to follow that this same part of the atropine molecule should give rise to vaso-dilatation. Atropine, however, producing also vaso-constriction, in certain doses at least, it would perhaps further follow that the remaining portion of the molecule should give rise to vaso-constriction.

It is plain that for the purpose of deciding so very delicate and important a question, the employment of the best available method of experimentation was necessary. That employed by Prof. R. Kobert, in his experiments "on the Influence of Pharmacological Agents on the Bloodvessels," as published in the *Therapeutic Gazette* for January, 1887, is briefly as follows:

The particular organ under experimentation (in most instances the kidney) was removed from the body of the animal, kept at the proper temperature by means of a properly constructed heat-chamber, and provided with the necessary canulas for transfusion experiments. The blood, always coming from the same animal or another one of the same species, was likewise kept at the animal's temperature by the same means; it was then arterialized by shaking it in a bottle containing air, and made to flow from Mariotte's flasks from a height corresponding to the normal arterial pressure of the animal during life. After the flow of blood through the organ had become uniform, poisoned blood was substituted for normal blood, and the condition of the vessels simply inferred from the change which took place in the outflow.

Most valuable results, no doubt, are obtained by means of this method, but still there are certain objections clinging to it which are as undeniable as they are difficult to remove. The latest achievement as regards improvement in method has been effected by Drs. von Frey and Gruber. (*Du Bois-Reymond's Archiv*, 1885, pp. 519–533.)

In Kobert's experiments, as mentioned above, the blood was arterialized by shaking it in vessels containing air, and its flow through the bloodvessels was uniform and uninterrupted.

It has been found that under these conditions, the blood corpuscles tend to settle and clog up the finer capillaries, and the blood, as it becomes more and more venous by standing, gives rise to contraction of the arterioles and capillaries, and, therefore, the necessity of gradually increasing the arterial pressure as the experiment proceeds, in order to maintain a uniform flow through the bloodvessels may be sufficiently accounted for by these two conditions.

In order to overcome these difficulties, von Frey and Gruber constructed an apparatus intended to establish a uniform and steady arterialization of the blood on the one hand and a flow of blood on the other, which would be more like that occurring in the normal intact animal. For the purpose of arterializing the blood, the apparatus was so arranged as to allow the blood to be spread out in thin layers over the walls of glass vessels containing air, from which it could take up any desirable quantity of oxygen and give off a corresponding amount of carbon dioxide. The blood thus arterialized, was collected and forced into the bloodvessels by means of a pressure and suction-pump, which was so arranged that when at work it somewhat resembled the heart's action. In other words, an ingenious attempt has been made by von Frey and Gruber to overcome the objections adherent to the old method by means of an artificial heart and an artificial lung.

In the method made use of in the experiments to be here described, a *natural heart and lung* were interposed between the blood reservoirs and the bloodvessels of the organ under observation, the arrangement being very simple and briefly as follows: The operation consisted in first isolating the heart and lungs of a dog and placing them in proper working order exactly as was described in connection with some experiments on the isolated heart published in the *American Journal of the Medical Sciences* for April, 1887. The outflow-tube, however, had a T piece inserted into it, close to its origin from the common carotids; two branches of this T piece being of course in the tube, the third branch was connected with the femoral artery by means of a rubber tube and glass canula of about the diameter of that artery.

The pressure against which the heart pumped its blood being made equal to that of the animal during life, that of the femoral artery under these conditions was exactly the same, as was ascertained by a mercury manometer, and pulsations could be distinctly felt in the limb.

Everything being arranged in good working order, a constant and uniform flow of blood through the limb was soon established; the blood being collected from the femoral vein and measured at stated intervals. The vena cava inferior, furthermore, having been previously tied above the liver when the heart was isolated, any loss of blood was prevented and only that portion of the limb was kept in circulation which corresponded to the area of distribution of the common femoral artery.

After the amount of outflow had become uniform, the drug was slowly injected into the femoral artery, and the condition of the vessels simply inferred from the change which took place in the outflow during and immediately after the injection was made.

The advantages of this method over the old, must, I think, be quite apparent to any one. Every drop of blood which flows through the organ is in the first place arterialized by the natural lung of the animal, exactly as it is under normal conditions, and besides, being pumped into the bloodvessels by the heart of the same animal, it really enters and flows through the vessels under the same conditions which prevail in the normal intact animal during life. Furthermore, the drug not being allowed to flow through the heart, both its rate and work were not interfered with, but remained uniform as long as the blood was good. The amount of work done by the heart formed an easy guide as to the condition of the blood, and as soon as a decided decrease took place the experiment was at once discontinued.

The drug was invariably dissolved in a small quantity of normal salt solution and injected into the femoral artery by means of a fine hypodermatic syringe, the injection lasting from between 20 to 30 seconds each time. Dog's blood had to be used in every instance, for, although very young sucking calf's blood had been found to enable the heart itself to perform normal work for a short time, it was, on the contrary, found absolutely impossible to obtain a current through the kidney or limb of the dog by means of other than dog's blood.

In the twelve experiments which were made in this manner, in not a single instance did œdema of either lung or limbs occur, which is an almost invariable occurrence when strange blood is used. The quantity of blood, which is generally obtained by bleeding four large-sized dogs, until marked changes in respiratory movements set in, is amply sufficient for an experiment of this kind. Dogs, bled at intervals of two weeks, may thus be used several times.

From our experiments we are justified in drawing the following conclusions, namely:

1. That tropin hydrochlorate gives rise to vaso-constriction by exciting the vaso-constrictors, and 2, that sodium tropate causes vaso dilatation by exciting the vaso-dilator, nerve elements.

On account of the small quantity of these substances at our disposal, no detailed experiments have as yet been made on other organs, but it was found in one instance that a small quantity of sodium tropate introduced into the heart, caused almost instantaneous diastolic arrest of that organ.

In concluding, I have to acknowledge my indebtedness to Mr. Lengfeld[1] for the preparation of the chemicals made use of, and also to Prof. H. Newell Martin, in whose laboratory these experiments were performed.

LARGE TUMOR OF THE RIGHT FRONTAL LOBE WITHOUT THE PRESENCE OF ACTIVE SYMPTOMS.[2]

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JOHN S., aged eight, was admitted to the surgical ward of the Children's Hospital August 31, 1886. The father is living and apparently a perfectly healthy man. From him no history of syphilis could be obtained. The mother died of phthisis. This boy with two others composed the family, one older and one younger, and both healthy children. The patient's illnesses previous to the date of his admis-

[1] Of the Chemical Laboratory at the Johns Hopkins University.

[2] Read before the Philadelphia Pathological Society, May 26, 1887.

sion were measles, whooping cough, and smallpox. Three years ago swelling of the left ankle began, and a few months later of the right elbow. There is no history of injury to account for the joint affections.

His condition on admission was the following: All the superficial lymphatic glands were much enlarged. The right elbow was enormously swollen, tender, and of a dusky red color. Several sinuses opened on the surface and led down to the joint, which was advanced in disease. The left ankle presented the same condition as the elbow. The tarsus was extensively carious, and there was decided acquired talipes varus. The left thumb was swollen, red and tender, and presented the appearances of syphilitic dactylitis. There was a large broken-down area below each axilla. The teeth were irregular and the cutting edges of the central incisors markedly serrated. In October, 1886, Dr. John Ashhurst excised the right elbow-joint and amputated the left thumb. The patient soon recovered sufficiently to be out of bed. In March, 1887, Dr. Samuel Ashhurst made a partial resection of the left tarsus. The child did well until May 14th, and never showed any symptoms of brain disease.

FIG. 1.

Photograph of child showing the diseased ankle, elbow, and thumb, also the broken-down area below the axilla.

On the morning of this date he was unusually irritable, and during the dressing of his foot apparently suffered pain; afterward until 1 o'clock he lay in a stupefied, though not unconscious state. Then, while being helped to a bed-pan, he was seized with a convulsion, which is thus described by the attending nurse. The convulsive movements began on the left side and were most marked in the face, neck, and arm, with later involvement of the chest and leg muscles. The members of the right side were not quiescent, but were convulsively elevated and drawn toward the median line. The eyes and head were violently turned toward the left side. The convulsion lasted three minutes, and after its cessation the following conditions obtained: There was complete right-sided hemiplegia and contractions of the left side with the production of a typical "claw-hand." Attempted movement of the limbs of this side was resisted in every direction. Neither anæsthesia nor hyperæsthesia existed, although apparently sensation was more acute upon the left side. The pupils were dilated unequally, the left measured seven millimetres and the right five millimetres in the presence of candle-light. There was marked conjugated deviation of the head and eyes to the left. A slight lateral nystagmus was occasionally manifest. The respirations varied; at times they were typically Cheyne-Stokes, at other times deep and almost sterterous, and again, short and gasping. The urine was free from albumin and sugar and deposited freely triple phosphate crystals. Numerous convulsions succeeded the first one, which was the most severe. They were observed by Dr. Morris J. Lewis, by the house-surgeon, Dr. Harvey Shoemaker, and by myself as follows:

The convulsions began on the left side with a spasmodic closure of the eyelid and twitching of the face, neck, arm, and leg. The convulsive wave then rapidly passed to the members of the right side, which were in turn convulsed and drawn toward the median line. These convulsions became milder and milder, until before death they consisted simply of twitchings confined to the left side.

On the evening of the day on which these manifestations began I examined the eye-grounds and found double optic neuritis. The edges of the disks were hidden by the swollen retinas, the surfaces of the elevations were gray-white, and there was wide distention of the lymph sheaths. The veins were full and tortuous, and the arteries by comparison small. No hemorrhages were noted. Death took place thirty hours after the first convulsion with no changes in the symptoms detailed, except a gradual failure of the pulse and several hours before death contraction and equalization of pupils to two millimetres.

Autopsy, six hours after death.

Body of an exceedingly wasted male child. General lymphadenoma; in the groin bunches above and below Poupart's ligament. Submaxillary and axillary glands all enlarged, those in right axilla suppurating. Excision of the right elbow-joint and tarsectomy of the left ankle. Enlarged gland just above the head of the left radius; trochlear glands enlarged.

Thorax: Partly calcified and enlarged lymph glands in the anterior mediastinum under the manubrium. Bronchial glands of the posterior mediastinum very large and cheesy, the entire group of bronchial glands presented this condition and scarcely any trace of gland tissue remained. Those most affected lay immediately anterior to the right bronchus. *Lungs:* A few adhesions at the right apex.

Lungs crepitant throughout; at apices a few small nodules, and here and there on the pleural surfaces were scattered fibroid and calcified tubercles. There were *no caseous areas*, except in the right lung, between the middle and upper lobes, a small partly cretaceous and caseous mass. *Pericardium and heart:* Pericardium smooth. Right heart dilated and full of clots, in the left the blood was fluid. All valves normal.

Abdomen: No peritoneal tubercle. *Liver:* Large, firm, the larger vessels distended. No gross changes noted. *Spleen:* Much enlarged, its hilus occupied by four or five caseous lymphatic glands to which was attached the tail of the pancreas. The body of the pancreas was normal. Section showed no tubercles in the pulp of the spleen, which was soft. *Kidneys:* Large, veins full, cortices opaque in places.

Stomach and intestines: Stomach almost empty and mucosa showed no changes. In the ilium several of Peyer's patches swollen and firm, but not distinctly ulcerated. Mesenteric and retroperitoneal glands all enlarged and cheesy.

Brain and membranes: Head large, symmetrical. Skull cap thin. Dura not adherent, smooth and very tense. The convolutions were swollen, sulci narrow. Gray matter not specially congested.

Inspection of the base: The right hemisphere looked larger than the left, particularly the frontal lobe, which, on separation of the longitudinal fissure, projected considerably beyond the median line, depressing the left median convolutions. On the under surface of the right lobe at the anterior part of the inferior frontal convolution there was a grayish white mass, which measured superficially 3 cm. in diameter. The posterior part of the third convolution was soft and œdematous, and this condition existed in a less degree throughout the orbital gyri. On separating the operculum a firm, solid mass existed immediately outside the root of the olfactory nerve at a point corresponding to the junction of the third right with the anterior gyrus of the insula. Further dissection revealed that this mass occupied two or three of the anterior gyri of the insula. The right middle cerebral artery ran over it, and its branches looked smaller than the corresponding ones on the left side.

There was no special matting of the pia over this mass. The optic nerves were firm and there was wide distention of their sheaths behind the globes. The optic tracts were spread as they passed over the crura. Over the pons and medulla the pia was thickened and infiltrated. The cerebellum was removed by cutting through the crura and was normal. The lower part of the *left crus* was in a condition of hemorrhagic infiltration, and there was a hemorrhagic exudate on the posterior end of the *left thalamus*. The pia, as it dipped in here, was matted and infiltrated. Pons and medulla showed no changes. The ventricles and ependymal veins were distended. In the right lateral ventricle a large grayish white mass was apparent, which occupied the head of the caudate nucleus, the body of which was œdematous. This œdematous condition extended to the anterior portion of the thalamus. No other lesions were found.

Dissection of the tumor region: After hardening the right half of the brain in alcohol, a careful dissection of the tumor region was made. The tumor extended from about half an inch of the tip of the

FIG. 2.

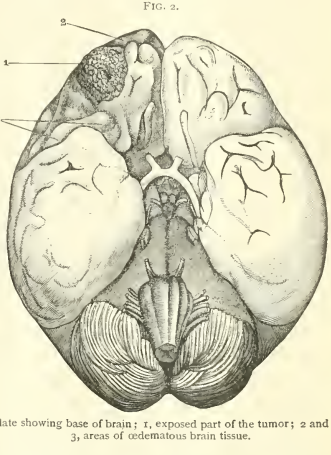

Plate showing base of brain; 1, exposed part of the tumor; 2 and 3, areas of œdematous brain tissue.

frontal lobe to a point corresponding to a section through the bases of the first and second frontal convolutions, about one inch anterior to the fissure of Rolando. Anteriorly it occupied the greater part of the white matter of the lobe, and came to the surface at the junction of the third frontal with the orbital gyri. Its depth was about two and a third inches. It consisted here of two tumors, the larger below, and the smaller above, separated by soft brain tissue. As it passed back it reached the orbital surface, and was apparent immediately behind and external to the root of the olfactory nerve. Its posterior limit was three and a half inches from the tip of the lobe. Section through the prefrontal sulcus showed that here the thalamus and caudate and lenticular nuclei were uninvolved, except one small spot of reddish softening at the top of the lenticular nucleus. The internal capsule was firm and natural. From the ventricular surface the tumor extended to the head of the caudate nucleus, and the parts immediately behind it were softened as far back as the thalamus. Microscopic examination of the tumor showed the presence of tubercle. Attempts to demonstrate tubercle bacilli failed. As before stated, the lesions on the opposite side of the brain were hemorrhagic infiltrations, which occupied the lower divisions (crusta) of the left crus and the posterior end of the left optic thalamus.

REMARKS.—The points of interest in the case which I have just detailed are manifestly the following: A large tumor, 3½ inches long and 2⅓

inches deep, occupied the white matter of the right frontal lobe as far back as the bases of the first and second frontal convolutions, and from the ventricular surface involved the head of the caudate nucleus, and by softening the structures as far back as the thalamus, and yet was practically, if not entirely, quiescent. The convulsions, the hemiplegia, the conjugate deviation of the head and eyes, in fact all the cerebral manifestations that were present during the thirty hours which elapsed between the first convulsion and death, were evidently due to the fresh hemorrhagic lesions in the left crus and on the left optic thalamus. The optic neuritis, on the other hand, must have been present for some time before its discovery, indeed, it was probably the only symptom of the presence of this brain tumor.

The fact that optic neuritis was present in connection with this tumor of the frontal lobe is further interesting, inasmuch as it has been stated that it is just in this region that tumors may exist without the production of changes in the end of the optic papilla. Dr. Gowers has well said, "Morbid appearances in the eye are frequent in intercranial disease, and often prove the existence of such disease when other symptoms are inconclusive, or afford evidence of its nature that can be obtained from no other source." The conjugated deviation of the head and eyes, was in this case as it is in a majority of instances, toward the lesion which produced the symptoms and away from the paralyzed side. The very reverse of this has been noted, and in Prevost's collection of cases, in three such exceptions, the lesion was found in the peduncles of the cerebrum or cerebellum. Here there was a hemorrhagic infiltration into the crus cerebri, but the usual order obtained. This tumor, faithful to its location in the so-called inert zone, produced no symptoms, and was besides too extensive in its invasion of the brain substance to have added any material or accurate data to the knowledge of localization. For the very reason of its quiescence, however, it has seemed to be a useful and interesting case to report, especially in connection with the fresh and active lesions upon the opposite side of the brain.

I am indebted to Dr. John M. Taylor for the drawing of the base of the brain, and to Dr. Randall for the photograph of the child. Dr. William Osler kindly aided in making the autopsy and the subsequent dissection of the brain.

1330 SPRUCE STREET.

THE INFLUENCE OF COCAINE ON THE PUPIL AND CORNEA.[1]

BY EDWARD JACKSON, M.D.,
ADJUNCT PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

AFTER a watery solution of cocaine is instilled in the conjunctival sac, there occurs, first, a slight contraction, and then a more pronounced and prolonged dilatation of the pupil. When a drop of the four per cent. solution is used, the contraction comes on with the widening of the palpebral fissure and the anæsthesia of the cornea and conjunctiva, within two or three minutes, and lasts for five or ten minutes, when the pupil resumes its normal size. This contracture, like other delicate reactions of the pupil, is to be satisfactorily observed only by studying the eyes of a young person with equal, mobile pupils, one of which is kept normal as a standard of comparison, while the other is subjected to experiment. And such a study is best made with the accommodation of the observed eye entirely relaxed, and in a rather dim light. These are the conditions, too, that enable one to determine most accurately when the dilatation begins. This is between ten and twenty minutes after the instillation. The maximum of dilatation is reached about the end of the first hour, and an hour later it has sensibly begun to decline; but the return to the normal is not complete for some twelve to twenty-four hours. During the whole period of dilatation the pupil reacts freely to light, often almost as freely as when in the normal condition; and there is almost the usual extent of consensual contraction, with accommodation and convergence. Then, at any time, the dilatation, even that produced by the strongest solutions frequently instilled, may be promptly cut short by the use of eserine.

Frost[1] states that one part of eserine will neutralize twenty-five parts of cocaine in its effect on the pupil. From a series of experiments made upon my own eyes, and those of six other healthy persons varying in age from four to thirty-three years, and unrelated, so that family idiosyncrasy cannot account for the result, I have found that it requires but one part of eserine to overcome the influence of some fifty or sixty parts of cocaine. Strictly speaking, they do not in any proportion exactly neutralize each other. But, when a solution containing one part of eserine to fifty of cocaine is dropped into the eye, there is usually, at the end of fifteen minutes, a slight dilatation of the pupil which lasts but a few minutes, and which may be absent, or may persist rather longer. This is invariably succeeded by a contraction of the pupil, at least when exposed to a good light, which lasts for from one to four hours, and is followed by a normal pupil, or a slightly dilated pupil passing into the normal some hours later.

When, under the influence of these combined drugs, the pupil is about passing from dilatation to contracture, or *vice versa*, and often throughout the whole period of their influence, the pupil subjected to it will contract more strongly than its normal fellow when the eyes are exposed to a bright light, or are strongly accommodated, yet will dilate more widely than the normal in a weak light with the accommodation in abeyance. This illustrates the fact that these two drugs cannot be made to neutralize each other exactly. It might be mentioned in passing, that when the action of eserine on the pupil has been neutralized or overcome by cocaine, its action on the accommodation remains well marked. In every case that could be tested as to this point, in which the mixed solution, eserine sulphate 1,

[1] Read before the College of Physicians of Philadelphia, June, 1886.

[1] American Journal of the Medical Sciences, April, 1887.

cocaine hydrochlorate 50, water 2000, was used, the range of accommodation was markedly extended. In my own case this extension amounted to two dioptres; in another it was fully three dioptres.

Because it leaves the pupil still responsive to light, and its mydriasis is easily overcome by eserine, cocaine is looked upon as a weak mydriatic. Yet with it we may readily attain a perceptibly wider dilatation of the pupil than with homatropia, atropia, duboisia, daturia, or hyoscyamia, either of which can effectually prevent any contraction of the pupil by eserine. My attention was first arrested by this power of cocaine some two years ago; I have tested it very many times since, and have never yet failed to get perceptibly greater dilatation of the pupil with cocaine than with any of the otherwise "stronger" mydriatics. It may be tried in this way: both pupils being under the influence of repeated instillations of a strong solution of another mydriatic and found equal, a drop or two of a four per cent. solution of cocaine is instilled in one eye, and an hour later it is found to present a larger pupil. Or the eye is first subjected to one mydriatic, and the pupil carefully measured; then, after the complete recovery, the second mydriatic is applied, and the pupil again measured. Or, again, one eye, say the right, is subjected to cocaine, while the left is subjected to the other mydriatic, and the pupils compared. After both eyes have fully recovered, the left is subjected to cocaine and the right to the other mydriatic. Of course, when cocaine alone is used, the dilatation is to be measured by a weak light, and while the accommodation and convergence are relaxed. With the other mydriatics it makes no difference whether the light is weak or strong, or the visual axes convergent or parallel.

As examples of this power of cocaine, the diameter of the pupils in the following cases may be cited:

Mrs. J. G., aged fifty, under hyoscyamia, 3.5 mm; cocaine, 5 mm.

Sallie McB., aged sixty, under atropia, 6.5 mm.; cocaine, 7.5 mm.

John F. H., aged forty-two, under duboisia, 4.5 mm.; cocaine, 6 mm.

Samuel E., aged twenty, under homatropia, 7 mm.; cocaine, 8.5 mm.

Edward J., aged thirty-one, under daturia, 8 mm.; cocaine, 8.5 mm.

The wider dilatation by cocaine was well marked in a case of locomotor ataxy, with Argyll-Robertson pupils, which, under cocaine, remained fixed to light, but contracted slightly with convergence. It has been most striking in elderly persons whose pupils would not dilate much for other mydriatics; but is often very considerable in young persons with quite dilatable pupils, as in Samuel E. mentioned above. The mydriatic power of cocaine is, in my experience, quite as constant as that of any other drug if the pupil be examined by a feeble light. And I cannot but think that its supposed inconstancy, spoken of by other observers, was mainly due to variations in degree of light and in the physiological reflex to it.

For diagnostic uses cocaine is altogether the best dilator of the pupil when dilatation of the pupil alone is sought; it is especially applicable to the eyes of elderly persons in whom such an action is most frequently needed; and its known power of lowering the tension of the normal eye, and the ease with which eserine overcomes its action, make it apparently least liable to cause serious outbreaks of glaucoma.

Under the head of the *influence of cocaine on the cornea*, I would call attention to certain phenomena, the more striking of which are presented by the cornea; and which should never be forgotten when cocaine is applied to the eye. Cocaine powerfully influences corneal nutrition, perhaps by its effect on nutrient vessels, perhaps in other ways, but certainly it does so. Many observers report that after the very free use of the drug the cornea sometimes becomes inelastic, flabby, and warped, making it difficult to bring properly together the edges of a corneal wound. Such a corneal change is incipient in a large proportion of the cases in which cocaine is used, and will reveal itself if properly looked for. I have never noticed it after the use of a two per cent. solution of cocaine, but I have not used such a solution nearly so much as the four per cent. I have detected it a few times after a single instillation of the four per cent. solution; and after repeated instillations it is quite common. The most delicate test of its presence is given in the irregular astigmatism it causes. This may be recognized subjectively by a blurring of test-type, or other small objects, and objectively by a delicate mottling of the pupil as seen in retinoscopy. When more pronounced the changes in the corneal tissue cause such irregularities in the corneal surface as are apparent by careful inspection of reflections therefrom.

This irregularity of surface is independent of any loss of epithelium. I have seen it come on while the eye was steadily under observation and the epithelium remained intact. I have produced it in my own eye by keeping the cornea exposed to the air after the instillation of two drops of the four per cent. solution. I have no doubt this simple irregularity of surface has given rise to some of the accounts of cases of sudden loss of the corneal epithelium. For in most of these, not all, it is not stated that the epithelium was seen to separate from the cornea, but that the cornea was suddenly found devoid of it, and when the relation goes on that the epithelium was found entirely regenerated in a few hours, or a day or two, without any considerable inflammatory reaction; I feel sure the case is one of this kind. For in my experience abrasion of the cornea under cocaine is followed rather by unusually severe inflammatory reaction—a fact to be borne in mind when removing a foreign body from the cornea by promiscuous scraping. The corneal change may proceed so far as to cause a notable haziness in that membrane. This is certainly favored by exposure to the atmosphere. And Würdinger,[1] experimenting on rabbits, caused very considerable corneal opacity by repeated instillations of a five per cent. solution; the production of the opacity being hastened by keeping the cornea exposed.

[1] Klin. Monatsblat. für Augenheilkunde, April, 1886.

It has been suggested, that it is by lessening the lymph supply of the cornea, and the outflow of aqueous humor when the anterior chamber is opened, as well as by anæsthesia, allowing unnoticed contact of foreign matters, that cocaine makes the eye more susceptible to various injurious influences.

That cocaine is not the only factor in the causation of such corneal opacity is suggested by a correlation of the experience of Bunge[1] and Wood-White.[2] The former, in Gräfe's clinic at Halle, had long used a corrosive sublimate wash to cleanse the conjunctiva prior to operations, without bad effects. Cocaine was introduced, and a series of cases presenting a peculiar parenchymatous opacity of the cornea ensued. Wood-White had used cocaine some months, without having any such trouble. He then substituted corrosive sublimate for boric acid as his disinfectant, and soon had five similar cases to record. He ceased using the mercuric chloride, and no more cases occurred.

Very often the use of cocaine in a normal eye is followed after three or four hours by a little feeling of irritation and smarting, and this condition attends upon a slight but very perceptible hyperæmia of the conjunctiva. When cocaine is used in an eye affected with acute conjunctivitis, the suffering is for the time relieved, but after an hour or so returns with increased severity. Noticeable inflammatory symptoms after the removal of a foreign body from the cornea, have, with me been a little more frequent, I think, since I have used cocaine. In at least four cases of corneal and conjunctival inflammation I have felt quite sure that matters were worse from the injudicious use of cocaine. This is one of them.

Mrs. R., æt. thirty-three, was seen in consultation for inflammation of the left eye. The lids were moderately swollen, the palpebral conjunctiva thickened and velvety, the ocular conjunctiva moderately hyperæmic. But there was a narrow, very dark, purplish pericorneal zone, and from the lower margin, over half the surface of the cornea, stretched a perfectly superficial ulcer. The bottom of the ulcer was faintly gray, not infiltrated, and bore here and there patches of gray, sloughy membranous tissue, which, at the margins of the ulcer, were continuous with the surface of the sound cornea beyond. Great pain was complained of, and evidenced in face and actions, comparable to that from corneal abrasion in nursing women, but proportioned to the greater extent of the ulcer. The tension of the globe was below normal. The patient, who was subject to asthma, had, three weeks before, a light attack of pleuro-pneumonia; and then some conjunctivitis, which, for a few days, had not been serious, and then, under treatment, had grown rapidly worse until I saw her. A 4 per cent. solution of cocaine had been prescribed, to be used every four hours. The application of it gave temporary relief, but, as the pain soon returned, she had the application repeated without the knowledge of the attending physician, sometimes as often as every hour. I stopped the cocaine, tapped the anterior chamber, bathed the eye with hot water, and put her on the use of atropia and hot stupes. The severe pain was at once relieved and did not return. Two days later the ulcer was free from sloughs and had a uniform gray base. From that time the eye steadily improved; but, after two months, though free from hyperæmia, presented a cornea nebulous, and slightly irregular over the whole area of the ulcer, and vision, with the best correcting lens, was but $\frac{15}{50}$.

In using cocaine in the eye, one should apply no more than is necessary; take especial care to guard the cornea from other injurious influences; and never place the drug in the hands of the patient for the relief of continuous, or frequently recurrent pain.

215 SOUTH SEVENTEENTH ST.

[1] Klin. Monatsblat. fur Augenheilk., September, 1885.
[2] Ophthalmic Review, January, 1886.

MEDICAL PROGRESS.

HOW IS HEAT STROKE FATAL?—BONNAL, in a communication to the French Academy of Sciences, on July 4th, reached the following conclusions: His experiments were 130 in number, extending over six years; they were made upon men, in a hot liquid; in a dry oven; and in a moist oven; with the body naked and covered.

Life is possible at a higher temperature than that of the body. Tolerance of heat is greater in dry than moist air.

Loss of weight is proportionate to height and duration of temperature.

Lost weight is regained in twenty-four hours; if great, urinary secretion is suspended, to reappear when the loss is made up.

Physiological effects of heat are proportionate to height and duration of temperature; they are enhanced by moisture. The order in which they show themselves is variable, generally pulse and respiration are incoördinate; these deviations from physiological conditions precede more serious sequences.

Evaporation plays a very small part in the tolerance of heat; perspiration is generally most abundant in the most serious conditions. Death results from paralysis of the sympathetic nervous system, and failure of vital coördination.

Elevation of bodily temperature is an effect, not a cause, or a symptom.

Cold affusions are useful only by their effect on the nervous system.—*Gazette Hebdomadaire*, July 15, 1887.

KÉFIR, A NEW KOUMISS.—The following account of this beverage is taken from *Le Pratique Medicale*, No. 10:

It can be made from the milk of different animals, but it is generally made from cow's milk. Fermentation is excited by the presence of the kéfir, which is a species of mushroom, white when fresh, and yellow when old and dry, compact, elastic, and about one-fiftieth of an inch in diameter.

Chemically it is composed of water, fat, peptone, and nitrogenous material.

Examined microscopically it is composed of the rods and cells of beer-yeast.

It is found in the mountains of northern Caucasus near the snows. The natives believe that it is produced

by the bushes which grow upon the mountain-tops. It is probable that the first origin is in the great number of bacteria which circulate in the atmosphere, and whose soil of development is furnished by the curds of coagulated milk.

At the beginning of the preparation of kéfir the grains should be allowed to swell in tepid water for five or six hours—two teaspoonfuls to a tablespoonful of kéfir grains; they should then be washed in cold water and put in half a glass of fresh milk, which is changed every three hours. The grains, which were yellow, become white, and are then ready for the preparation of kéfir.

This is done by placing the white grains in a quart of fresh cow's milk, and the whole placed in uncorked bottles and exposed to a temperature of about 45° F., and frequently shaken. The milk begins to ferment soon, and in seven or eight hours the mass is fermented. The kéfir grains are removed by filtering through muslin, the liquid replaced in bottles, which are only partly filled, and carefully corked.

The milk is left at a constant temperature, and shaken every two or three hours. Fermentation continues in spite of the absence of the ferment, and in twenty-four hours the drink is ready. The grains of kéfir may be washed and used indefinitely.

Kéfir is richer in albumen than koumiss, less alcoholic, and less acid.

The following table of analysis shows the composition of milk, koumiss, and kéfir:

	Cow's milk.	Koumiss.	Kéfir.
Albumen . . .	48	11.2	38
Butter . . .	38	20.5	20
Sugar of milk . .	41	22.0	20
Lactic acid . . .	...	11.5	9
Alcohol . . .	...	16.5	8
Water and salts . .	873	918.3	905

Apon, a Compound Tincture of Thymol.—Poulet has suggested the following, as a convenient way of administering thymol:

R.—Tinct. capsici . . .	20 parts.
Ammonii liquid . . .	10 parts.
Essent. thymi,	
Chloral hydrat. . . .	ää 1 part.
Alcohol (60 per cent.) . .	100 parts.

To be kept tightly corked.

Sig.—10 to 20 drops in water; a half glass of water to be taken half an hour afterward.

This preparation may be mixed with oils and used as a liniment.

It is used as an analgesic.—*Deutsche medicinische Wochenschrift*, July 14, 1887.

Tubo-ovarian Cystic Pregnancy; Abortion; Death.—A case of unusual medico-legal and pathological interest is described in the current number of the *Archiv für Gynäkologie*, by Dr. Paltauf, of Vienna. A woman, aged twenty-eight, previously regular, missed a period at the end of June, 1886. Directly believing that the amenorrhœa was due to impregnation, she induced a midwife to procure abortion. On July 1st, several injections, of what fluid is not stated, were thrown up into the uterine cavity, by the aid of a gum-elastic catheter. These injections caused abdominal pain, and the first was followed by slight hemorrhage. During the next fortnight the patient suffered from constant pain and feverishness, and had for the greater part of that period to keep her bed. She was treated by her medical attendants for parametritis and pelvic peritonitis. A resistant body could be detected in the posterior vaginal fornix on digital exploration; it was not very tender. At length the patient became prostrated, diarrhœa set in, and she died on July 26th, after having admitted the cause of her illness. Dr. Paltauf was ordered, by the legal authorities, to make a necropsy. He found evidences of universal peritonitis, and the pelvic viscera were firmly matted together. The vagina was capacious, its rugæ effaced, and its mucous membrane of a grayish-violet color. The uterus was enlarged; behind it was an oval cyst over three inches in its long diameter. The relations of this cyst, which contained an embryo seven-tenths of an inch long, were most remarkable, and are fully described in Dr. Paltauf's paper. There was a tubo-ovarian cyst on both sides, and the large embryo-bearing cyst behind the uterus was part of the left tubo-ovarian cyst. A most unique feature was the free communication which was discovered to exist between the uterus, the tubes, and the cysts, so that there was a free passage from either side of the cavity which contained the fœtus into the uterus and *vice versâ*, without any opening into the peritoneum. The parenchyma of each ovary was uncovered, flattened out, on the surface of each cyst, but distinctly connected with the uterus by the ovarian ligament. Hence gestation had occurred in a case of probably congenital double tubo-ovarian cyst with ovaries malformed, yet perfectly able to carry on their functions. The necropsy and the evidence brought forward at the judicial inquiry proved that deceased had died of septic peritonitis, that she was in the second month of a tubo-ovarian cystic pregnancy; that the embryo was alive at or shortly before the death of the mother, and had no share in causing her death; that the infection was introduced from without into deceased's body; that the mechanical attempts to procure abortion were most probably the source of infection; that the nature of the peritonitis corresponded with the duration of the morbid processes; that the abnormal pregnancy could not have terminated in the ordinary manner, nor by the usual means whereby abortion is procured, and was not necessarily the cause of the mother's death; and that the action of the midwife might have terminated a normal pregnancy. The midwife was found guilty not of criminal abortion, but, according to Austrian law, of an offence against the safety of human life.—*British Medical Journal*, July 16, 1887.

Casein as an Emulsifier, is proposed by M. Léger in *L'Union Pharm.* of May 15th, on account of its permanence, and the ease with which it may be handled. To separate it, he treats 4 quarts of milk with 15 drachms of ammonia for twenty-four hours, and, after removing the saponaceous matter from the surface of the mixture, precipitates the serum with acetic acid. The magma of casein, strongly pressed, is treated with sodium bicarbonate, with a sufficient quantity of sugar to make the dried product contain one-tenth of its weight of casein. The powdered substance dissolves easily in water, and,

mixed with its weight of gum, may be used for almost all of the emulsions. Resinous matters and balsams, previously dissolved in alcohol, essences, and oils, may be mixed with it in the bottle itself, without using the mortar. The only defect in this saccharate of casein is its slight animal odor, which, it is believed, can be counteracted.—*American Journal of Pharmacy*, July, 1887.

LANIUM ALBUM (NETTLE) IN THE TREATMENT OF UTERINE HEMORRHAGE.—FLORAIN reports good results in metrorrhagia, where other drugs had failed, from the use of the following:

Tinct. lamii albi	. . . .	10 parts.
Syrup simpl.	. . . .	5 parts.
Aquæ	. . . . .	2½ parts.

A teaspoonful may be taken every half hour until hemorrhage is checked, and then every four hours. The drug is easily taken and well borne.

It contains tannic and gallic acids and nitrates, upon which its astringent properties depend.

An alkaloid, *sulphate of lamine*, has been isolated, which is sparingly soluble in water, but soluble in hydrochloric and nitric acids. Its exact analysis has not been made.—*Gazette de Gynécologie*, July, 1887.

MEMBRANOUS ENTERITIS; INTESTINAL PERFORATION; PERITONITIS; DEATH.—At a recent meeting of the Society for Internal Medicine at Berlin, Rothmann reported the case of a patient who had repeated discharges of blood and fibrinous masses with symptoms pointing to a localized ulceration; perforation, peritonitis, and death followed. Post-mortem revealed a knuckle of intestine adherent near the junction of the stomach and duodenum. The adhesions had ruptured, and the finger found an annular constriction in the intestine.—*Deutsche medicinische Wochenschrift*, July 7, 1887.

CASTRATION FOR TUBERCULOSIS OF THE TESTICLE.—FINCKH publishes some statistics on a basis of twenty-nine cases of castration performed for tuberculosis of the testicle in the surgical clinic at Tübingen. In some cases the time of observation after the operation extended to thirty years, and at the least to one year.

He warns against the partial extirpation of the testicle, which has been recommended by some, to preserve for the patient the "illusion" of virility, rightly claiming that it is impossible to be certain that the rest of the testicle is really healthy, and with respect to the psychic effect of castration, he quotes the case reported by Simmonds, in which double castration for tuberculosis relieved the patient of decided hysterical symptoms.

The epididymis is the most frequent starting-point for the tubercular process, much less frequently the body of the testicle, and only now and then the seminal vesicles, or the prostate. The infection very rarely descends from the kidney to the genital organs. The tuberculosis frequently spreads from the epididymis to the body of the testicle, and sometimes to the tunica and the scrotal tissues. The tunica is often the seat of miliary tubercles. The infection may extend along the vas deferens to the prostate and seminal vesicles, and it may reach the testicle of the other side, by descending its vas deferens. But out of eight cases in which double castration was performed, Finckh found the vas deferens healthy on both sides at the time of operation in five, and in two it was diseased on only one side. In the remaining cases both cords were tuberculous, and on one side the changes extended within the pelvis, so that some diseased tissue was left after extirpation, and yet the patient lived twenty-three years after. In like manner, Simmonds found the prostate healthy in three cases out of five of tuberculosis of the epididymis of both testicles, consequently the disease must have had an independent origin upon both sides, or the infection was able to pass through the prostate without affecting it. The existence of disease in both testicles, then, does not prove that the intrapelvic parts are involved, and even if they are, recovery is possible, although the whole disease tissue cannot be removed—therefore the opinion held by some, that castration is contraindicated when the tuberculosis exists upon both sides, is erroneous.

It has generally been supposed that if the intrapelvic parts of the genital organs were tuberculous, the prognosis was hopeless, and yet in seven cases in which some diseased tissues had to be left in the cord, none had recurrence—the elapsed time of observation after operation being 24, 6, 5, 3, 2, and 1 (2 cases) years. Finckh does not seem to be familiar with the fact that in the two cases of spontaneous recovery from tuberculosis of the testicle, proven by autopsy, quoted by Reclus, the prostate was involved when the process was at its height. Unfortunately Finckh does not give any facts as to the prognosis when castration is not performed.

The youngest of Finckh's cases was 8 years old, the next 18, the oldest 63. Of the 29 cases 6 died subsequently of tuberculosis of various organs, but no local recurrence was noted. One of these cases died of miliary tuberculosis three weeks after the operation. The longest duration of life of these six cases was four years, and adopting this period as the extreme limit during which recurrence is to be expected, there are 13 cases which can be set against them, in which no recurrence took place within that time.

The duration of the disease at the time of operation is not considered, but from the accompanying histories of the cases we learn that in the six cases which died of tuberculosis, the duration of the disease before operation was 1 month, 6 months, 18 months, 2 years (2 cases), and of one case not given. Of the other cases there are seven in which the duration was over one year (in two cases, three years), all remaining free from tuberculosis five years after the operation. Therefore long duration does not necessarily contraindicate castration. Only one case died from the operation, an old man, of "exhaustion."—*Annals of Surgery*, July, 1887.

FORMULÆ FOR AMYLEN-HYDRATE, A NEW HYPNOTIC.—VON MERING advises the following:

R.—Amylen-hydrat.	. . . .	℥5.
Aq. dest.	. . . .	3ij5.
Extr. liquir.	. . . .	3ij½.

Half of this may be taken on retiring.

Also,

R.—Amylen-hydrat.	ℳ75.
Aq. dest.	312½.
Mucilag. gum arab.	35.

To be used per rectum. The drug may be combined with morphia as follows:

R.—Amylen-hydrat.	ℳ90
Morph. hydrochlor.	gr. $\frac{8}{10}$.
Aq. dest.	315.
Extr. liquirit.	32½.

Half of this may be taken on retiring.

Also,

R.—Amylen-hydrat.	31.
Morph. hydrochlor.	gr. $\frac{1}{2}$.
Aq. dest.	312½.
Mucilag. gummi arab.	35.

Which may be given per rectum.—*Therapeutische Monatshefte*, July, 1887.

The Motor Power of the Stomach and the Influence of the Electric Current.—Professor Ewald has enriched our diagnostic resources by a new procedure for investigating the motor power of the stomach (Berlin Medical Association, June 15th). We know pretty well the chemical changes taking place during digestion, but our experiments on the time required by the stomach for transmitting food into the duodenum have hitherto been limited to patients suffering from gastric fistula. Trials made in the normal state of health have always failed. A means has now been found in salol excellently adapted to solve this question. Nencki, who discovered salol, has stated that it remains undissolved in the stomach, but is decomposed into phenol and salicylic acid by the pancreatic juice. The first part of this dictum is correct, the latter incorrect; for salol is decomposed by any neutral mucous membrane, whilst the juice of the pancreas seems rather to delay the decomposition. Salol, on reaching the bowels, immediately dissolves, and shows almost instantly in the urine as salicyluric acid. This easily yields a red precipitate with chloride of iron. This reaction will show almost exactly the moment of the entrance of food into the bowel. The urine of seven persons in sound health showed the reaction to take place mostly within three-quarters of an hour, rarely within half an hour. It took two to three hours in seven cases of "ektasia ventriculi," this disease being distinguished by loss of motor power in this organ. On applying the electric current to the abdomen, the reaction took place in normal cases a quarter of an hour sooner; in cases of enlargement of the stomach, half an hour sooner. This experiment says much in favor of this method of treatment, which is despised by so many physicians. Science owes to Professor Ewald a discovery equally important in theory and in practice.—*British Medical Journal*, July 2, 1887.

A Routine for Oestetric Practice.—Dr. Duncan, of the Middlesex Hospital, advises the following for all obstetric cases:

Assuming, then, that the sanitary arrangements, both of the lying-in chamber and of the house in which it is situated, are perfectly sound, I venture to suggest that every obstetric case should be conducted somewhat as follows: The medical attendant, before visiting his patient, ought to feel confident that he does not carry in his clothes the means of infection. Before making a vaginal examination the hands should be thoroughly washed with carbolic soap and water, using always a nailbrush, and then the forefinger smeared with some antiseptic. (I always use a 1 in 500 solution of corrosive sublimate in glycerine.) The vagina is to be washed out before the birth of the child with a warm solution of either 1 in 40 carbolic acid, or 1 in 2000 sublimate. For the five days following delivery the vagina is to be washed out night and morning with a 1 in 2000 sublimate solution, and from then until the lochia have ceased with a solution of half the strength. Any perineal laceration should be sutured, and in any case where it has been necessary either to apply the long forceps or to insert the hand into the uterine cavity, this latter should be washed out by means of a double pipe, and then a thirty grain iodoform bougie passed well into the uterus. The nurse should take precisely the same precautions as the practitioner with regard to her hands before attending to her patient. She should be careful to remove all soiled linen from the room, and to keep the catheter and the vaginal pipe immersed in a basinful of 1 in 40 carbolic or 1 in 2000 sublimate solution. If every woman's lying-in were to be conducted on the lines above indicated, it seems to me we should very rarely meet with that fearful malady, puerperal fever.—*Lancet* July 16, 1887.

Cocaine in Mental Diseases.—Heimann, of Charlottenburg, Berlin, writes as follows of his experience with cocaine in mental disorders in the *Journal of Mental Science* for July, 1887:

Certain therapeutic effects upon the human organism ascribed to cocaine, occasioned me to make use of the drug in suitable cases of psychosis and psycho-neurosis. Stimulant action and exhilaration (Euphoria) on the one hand, and on the other depression of undue sensitiveness, these were the effects I looked for from the alkaloid. Unfortunately, I am able to record scarcely a single case of certain and permanent cure following the use of the drug.

In melancholia, without hallucinations, cocaine was ordered in doses of 0.01 gramme thrice daily; the dose was increased up to 0.06 gramme (in English weights grain $\frac{1}{6}$ to grain $\frac{2}{3}$). At the end of a fortnight the treatment was obliged to be abandoned on account of failure to health, due to anorexia; the drug had been quite without effect on the psychosis. No secondary effects were witnessed with the exception of acceleration of pulse and dilatation of pupil, both of which lasted some three or four minutes. The small doses were chosen in order to avoid the production of hallucinations.

In melancholia with hallucinations cocaine was given in doses of 0.02 gramme ($\frac{1}{3}$ of a grain) about thrice daily, again without success. One of these latter patients suffering from hypochondriacal delusions, stated that for a very short time after taking the drug (one to two minutes) he felt easier. After fourteen days, when no advance had been made, but on the contrary, complete anorexia had supervened, the drug was stopped.

To test the vaunted influence of cocaine on the motor centres, the drug was administered subcutaneously in doses of 0.02 gramme ($\frac{1}{3}$ of a grain) per diem, to two patients suffering from katatonia; the drug was continued for several weeks without the slightest effect.

Finally, even in cases of hypochondriasis, neurasthenia, and hysteria in which I looked for great success, having regard to the exhilarant effects described, even here there was complete absence of any obvious or permanent improvement. The hypochondriacal patient, who hails with gladness every new remedy, was soon obliged to complain, and with justice, of anorexia. The subject of neurasthenia complained more and more of weakness, being unable to take sufficient nutriment. In hysterical patients besides anorexia, which, by-the-bye, is not to be disregarded, owing to the frequent coexistence of anæmia, there occurred attacks of vertigo, which soon lessened their faith in the medicine. From these, my observations, I am constrained to deny to cocaine a place in the therapy of mental disease.

OUTLINING THE STOMACH BY PERCUSSION.—The following method, for which novelty and utility are claimed, is advocated by RUAULT in the *Gazette Hebdomadaire* of July 1, 1887:

The patient is to be placed on his back, the arms raised, the hands behind his head. The physician, facing the foot of the bed at the patient's left side, places his ear upon the left false ribs. With his left hand he percusses from the left border of the sternum in a straight line toward the abdomen. He so continues, from left to right, until he has outlined and marked on the skin, if desired, the peculiar resonance of the stomach. In doubtful cases fluid or gas may be introduced into the stomach with advantage.

DIABETES AND GLYCERINE.—W. B. RANSOM, of Trinity College, Cambridge, reports the following conclusions from experiments bearing upon this subject in the *Journal of Physiology*, vol. 8, No. 2.

These experiments tend to show:

1. That certain forms of glycosuria may be checked by glycerine.

2. That glycerine acts more efficiently when introduced into the alimentary canal than when injected subcutaneously.

3. That glycerine checks glycosuria by inhibiting the formation of sugar in the liver.

3. That in this way glycerine may lead indirectly to an accumulation of glycogen in the liver.

Viewing the formation both of glycogen and sugar as a process of cell metabolism, quite independent of ferment action, he is unable to suppose that glycerine produces its effect by acting on a ferment in the blood, but considers it probable that it excercises some direct influence on the protoplasm of the liver cells.

Of a possible therapeutic use of glycerine in diabetes mellitus he is not now in a position to speak. The reports of clinical observers are very various, and his own observations are as yet too few to form a basis for definite conclusions.

SUPRAPUBIC CYSTOTOMY FOR A FOREIGN BODY AND CALCULUS.—DR. GILLON, of Wellington Hospital, New Zealand, reports in the *British Medical Journal* of July 30, 1887, the case of a man, who in 1884, in endeavoring to dislodge a calculus with a pen-holder pushed the latter into the bladder. The operator found a calculus encrusted upon the holder, both weighing 2¾ ounces. The patient made an uninterrupted recovery.

THE TREATMENT OF LARYNGEAL PHTHISIS IN THE STAGE OF ULCERATION.—ASTIER gathers the following methods of treatment:

1. For pain,

Ext. opii,	
Ext. belladonn.	ää gr. 8.
Dissolve in aqua lauro-cerasi. .	℥ 5.

Used locally.

Insufflations of $\frac{1}{10}$ of a grain of morphia mixed with starch, as advised by Mackenzie, may be used twice daily; and the dose may be increased to ½ a grain.

Moure employs 5 grains of hydrochlorate of morphine in 15½ ounces of water by spray.

Astier employs the following powder by insufflation:

Plumbi acetat.	gr. 30.
Morph. hydrochlorat.	gr. 3.
Sacchar. lact.	℥ 2½.

To be applied after cleansing the mucous membrane by solutions of potassium chlorate or sodium bicarbonate.

2. The ulcerated surfaces may be cauterized by nitrate of silver, galvano-cautery, tincture of iodine, or

Iodin.	gr. 5.
Potass. iod.	gr. 45.
Glycerin.	℥ 2½.

Iodoform, in suspension in glycerine, or in powder may be used.

3. If œdema be present, tracheotomy may be necessary.

4. Forced feeding, and preliminary anæsthesia by cocaine, before introducing a stomach-tube, may be needed.

The lactic acid treatment (Krause) consists of the use of solutions of from 10 to 80 per cent. of the acid; from which good results have been obtained.—*Journal de Medecine*, July 24, 1887.

WHAT IS THE SEMILUNAR SPACE OF TRAUBE?—It will be remembered that TRAUBE was the first to draw attention to this region of the body in his studies of the physical signs of pleurisy; the space which bears his name is of interest to diagnosticians in examining the stomach; it is given thus by *Le Progrès Médicale* for July 23, 1887: "It is that portion of the left inferior anterior thoracic region corresponding to the tympanitic resonance of the stomach." Its determination is effected by following the usual rules for percussion.

TUBERCULOSIS IN CATTLE.—MÜLLER concludes, from an extensive series of experiments, as follows: Forms of tuberculosis similar to those in the human subject are readily produced in cattle, as diffuse osteomyelitis, miliary tuberculosis of bones, which in the greater number of cases develop freely in six weeks after infection with well-marked symptoms.—*Centralblatt für die medicinischen Wissenschaften*, July 16, 1887.

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THE MEDICO-LEGAL SIGNIFICANCE OF TWO OR MORE MORTAL WOUNDS.

Interesting and instructive papers have lately appeared in The Medical News, by Surgeon Alfred A. Woodhull and Prof. D. Hayes Agnew, upon this subject. Since then the lamented death of Lieutenant Arthur H. Clarke, U. S. N., who is believed to have destroyed himself by a pistol-shot on board the "Iriquois," a few months ago, brings again before us the oft-mooted question, whether it is possible for a person to inflict upon himself, consecutively, two mortal wounds, say by shooting, one bullet through the brain and another immediately afterward through the heart?

The medico-legal interests connected with this question will be immediately apparent when we consider the issue involved. If, for example, we deny the possibility of a suicide, after having inflicted upon himself a wound which we judge must have been immediately fatal—such as that caused by a pistol-ball or a dagger through the heart, or by a bullet tearing through the brain—repeating the latter act by a *second* equally fatal wound, then in a case where a dead body is discovered displaying two such mortal wounds, our only inference could be that it was a case of homicide and not a suicide. On the other hand, if we admit the possibility of a person fully determined on self-destruction, having failed in his first effort to destroy himself *instantly*, to repeat the deadly act, so as not to be foiled in his attempt, then the case assumes a very different aspect. An innocent person, arrested, possibly under suspicious circumstances, might be tried for murder, and even convicted under the former view of the case, whilst under the latter view the suspected person might be very justly acquitted of all complicity in the case, and the death be chargeable solely to the unhappy suicide himself.

The importance to the medical jurist of clear views on this subject cannot be over-estimated. The case referred to by Surgeon Woodhull was that of a man found in bed, unconscious, with a pistol-ball that had gone crashing through his brain, and contusing the opposite parietal bone. He still held the fatal weapon tightly grasped in his hand. Two chambers of the revolver had been discharged. The second ball had passed up through the ceiling, obliquely, some little distance from the side of the body. In this case there could be no doubt whatever that the act was suicidal. There was no second wound on the body. The only point of interest in connection with our present subject is the fact of the *second* discharge of the weapon. Was it intentional on the part of the suicide, or was it a mere automatic act? Was the man capable, after having shot himself through the brain (the wound being not immediately fatal), of again voluntarily firing his pistol? Or did he, as Surgeon Woodhull inclines to believe, unconsciously, with his finger yet on the trigger of a self-cocking pistol, exert an automatic pressure on that trigger, as his arm would necessarily relax and partially fall, so as to discharge the weapon, as before mentioned? There seems to be sufficient grounds for adopting the latter view in this particular instance, inasmuch as even assuming the man's ability consciously to fire a second shot, it would certainly have taken a different course, namely, through his own body. The only other possible alternative to adopt is the idea that the shot through the ceiling might have been the first one fired—"a trial shot, to determine whether the weapon was in good working order."

We think that the above case certainly warrants the presumption that, under similar circumstances, where a self-cocking pistol has been *twice* fired, the second shot may very possibly have resulted from an automatic, unconscious act—on the part of the suicide. Nor need this theory be necessarily negatived, even if the second (supposed) shot has entered a vital part of the body, instead of striking some outside object, since it is quite conceivable that such a chance-shot might equally be directed toward the man's body, depending entirely on the particular position assumed by the relaxing arm.

The medico-legal point in such a case is just that suggested by Dr. Woodhull. "Another person might have been fatally wounded by this second shot. In that event, the discovery of two bodies might have led to the suspicion of murder followed by suicide; while, in fact, there would have been suicide followed by involuntary manslaughter."

Prof. Agnew's interesting article opens with the

question whether " it is possible for an individual, with suicidal intent, and in quick succession, to inflict a perforating shot wound in the head and another in the heart." In a case in which he was called as an expert, he held that it was, and we think his view is capable of abundant proof. But, first it is necessary to disabuse ourselves of the notion that wounds of the brain and heart are always immediately fatal. Indeed, as regards the former, we have abundant evidence that they are by no means always mortal; numerous cases are recorded of recovery after the most frightful wounds of the head, involving even a loss of a considerable portion of the brain. After a severe wound of this organ, the only conditions disqualifying the individual from voluntarily repeating the attempt upon his life would be either immediate loss of consciousness, or immediate paralysis of the voluntary muscles. The records of surgery show that neither loss of consciousness nor paralysis necessarily follows gunshot wounds of the brain; the occurrence of the paralysis being altogether dependent upon the particular areas or portions of the cerebral mass involved, so that this factor must be eliminated in the discussion of this question. Given then, the *ability* of the individual thus circumstanced, together with an unimpaired *will*, we can see no impediment to his repeating the attempt at self-destruction.

Secondly, as regards wounds of the heart, the records fully demonstrate the fact that such injuries are by no means immediately fatal; indeed, in not a few instances recoveries have taken place. The periods of survival in fatal cases have varied from a few hours up to several months. Hence there is no difficulty in admitting the possibility of a determined suicide making a second, or even a third attempt upon his life, in case the first one—even though it be a mortal wound of the head or heart—was not immediately fatal.

To place this matter beyond all question, the testimony of Prof. MacLeod, of the University of Glasgow, quoted by Prof. Agnew, and the records of the office of the Coroner of this city also show a number of similar instances of multiple wounds suicidally inflicted. One is that of a policeman who first shot himself through the head, and immediately afterward through the heart. This was done in the presence of witnesses. Another case is that of a lad aged nineteen years, who inflicted four shot wounds from a revolver on his own person. The first bullet entered the forehead, and after taking a circuitous route, lodged about the middle of the left temporal lobe. A second ball was fired into the chest, passing through the left ventricle of the heart. A third shot passed through the abdomen; and the fourth into the neck. Death ensued from pericardial hemorrhage. A third case is that of a grocer who was found dead in his room, having locked the door. A pistol was still clutched in each hand; one bullet had passed through the brain, and a second through his heart.

From the foregoing statements we think the following propositions are sustained:

First. The presence of two or more wounds in a dead body is not inconsistent with the idea of suicide. There is abundant proof to show that a person determined on self-destruction, may first shoot himself in the head, and immediately follow it up by a shot through the heart, or *vice versâ*.

Secondly. In the case of two bullet-wounds in a suicide, made by a self-cocking pistol, it is quite possible that the second wound may have been inflicted unconsciously and automatically in the descent of the arm after firing the first shot. This, however, could only occur where a self-cocking pistol had been the weapon used; we do not believe it to be possible with an ordinary pistol.

Thirdly. In an unknown case, and in the absence of all evidence, the presence of several wounds upon a dead body would generally be suggestive of murder; although, as we have seen, it might not be positive proof of it. The nature of the wounds, their position and direction, are the important circumstances which would here have to be considered.

AMYL HYDRATE—A NEW HYPNOTIC.

In the *Therapeutische Monatshefte* for July, 1887, PROFESSOR MERING, of Strassburg, calls attention to a substance known as amyl hydrate, which possesses hypnotic powers, and belongs to the group of tertiary alcohols. When a small dose was given to a frog, it produced a failure of reflex action, and finally sleep. In the higher animals, such as the dog or rabbit, deep sleep was the first symptom to assert itself, the loss of reflex action following it. The advantages which Mering claims for amyl hydrate is that it has but little effect on the circulation as compared to chloral, its chief influence being upon the respiratory system, so that in those animals to whom a lethal dose was administered death came by failure of respiration. In large doses, however, it very greatly depresses the heart, and it can scarcely be said to be a drug which can be used fearlessly.

The clinical side of Professor Mering's paper records the use of amyl hydrate in a very large number of cases in which we are generally accustomed to use chloral. He has found it useful in delirium tremens, and all morbid conditions of nervous matter, and has also used it with good results in the insomnia of phthisis. Generally he administers it in the form of a clyster, in a mixture consisting of seven parts of amyl hydrate, fifty parts of water, and twenty parts of mucilage of acacia. When pain is associated

with the insomnia, he adds a small dose of the muriate of morphia.

GASEOUS ENEMATA IN THE TREATMENT OF PHTHISIS IN GERMANY.

German physicians have shown their customary reserve in the adoption of expedients whose utility is not based upon the soundest of pathological grounds in adopting the recently examined treatment of phthisis by enemata of gases. At a recent meeting of the Society for Internal Medicine, of Berlin, Statz reported the results which he had obtained in treating ten patients in Fräntzel's clinic, eight of whom were advanced in the disease. The treatment was thoroughly tried for periods varying from nine days to sixteen weeks. In six cases the physical signs were improved. In all general palliation ensued, but in none were the bacilli influenced. The improvements in appetite and weight were lost as soon as treatment was suspended. The value of the treatment seemed to be entirely palliative and transient. Further trial was urged by Statz, but in the ensuing discussion Ewald stated that he could not see grounds for placing reliance upon the method.

THE PROGNOSIS IN THE CASE OF THE CROWN PRINCE.

The résumé of Virchow's paper on Pachydermia Laryngis, which we print to-day, and the published reports of his examination of the fragments of the growth removed by Dr. Mackenzie from the larynx of the Crown Prince of Prussia, leave no doubt as to the opinion of this great pathologist as to the benign character of the morbid growth. No epithelial elements were found in those portions of submucous connective tissue which were removed in the second operation. Their presence, according to the tenor of his paper, would have declared the affection to be cancerous, no matter what the character of the surface tissue. Deep connective tissue was not furnished in the specimen last examined, and proliferation of epithelial masses was found in the superficial portion only, but in no position did this proliferation attain the character of independent formation. He states that this excised piece, in still greater degree than that previously removed, presented the appearance of a hard compressed wart, the base of which did not contain the remotest evidence of a neoplastic penetration into the tissue.

Virchow, in plain language, has not discovered any appearances indicative of malignancy in the specimens examined, and from his knowledge of pathology he does not hesitate to pronounce the morbid growth in the Crown Prince's larynx to be a simple wart without any cancerous tendency. The fact of recurrence does not militate against this view, and he expresses the opinion that every recurrence of the growth can be successfully removed as it presents, until, as in the history of similar cases, final eradication is accomplished.

With profound regret we record the death of Nathaniel Archer Randolph, M.D., which occurred on Sunday last, while bathing in the surf at Longport, N. J., whither he had gone to secure a day's needed rest.

Dr. Randolph was born in the neighborhood of Philadelphia about thirty years ago. He received a liberal education at Cornell University and graduated in medicine at the University of Pennsylvania in 1882. He subsequently pursued in Germany his studies in physiology, therapeutics, and the relation of foods to nutrition in which subjects he was specially interested. Last year his qualifications as a lecturer received early recognition by his election to succeed the late Dr. J. G. Richardson, as Professor of Hygiene in the University of Pennsylvania.

Dr. Randolph possessed cultivated tastes, a benevolent disposition, and a high sense of professional responsibility; he was a capable teacher, an accomplished student, and an able writer. His last published research was a thoughtful, physiological study on the irradiation of motor impulses, which was read before the College of Physicians in March last. He was an active worker on the staff of The News until last May, when, with Dr. Dulles he assumed the management of *The Medical and Surgical Reporter*, and in this new field he labored with characteristic zeal. He has been cut off at the outset of a career which was full of promise of honor to himself and usefulness to his fellows, and a wide circle of sorrowing friends mourns his loss.

Dr. Pedro Francisco da Costa Alvarenga, of Lisbon, who died several years ago, childless and possessed of a large fortune, has willed the greater portion of his wealth to scientific and charitable institutions. Among his bequests he has left about $18,000 to the College of Physicians of Philadelphia, of which he was an Associate Fellow, and the same amount to the Medical Society of Berlin, at whose meetings he is said to have been a frequent visitor.

The American Gynecological Society will hold its annual session in the Hall of the New York Academy of Medicine on September 13th, 14th and 15th. Several distinguished British and Continental obstetricans and gynecologists have accepted invitations to participate in the proceedings.

The American Academy of Medicine will hold its eleventh annual meeting at Columbian College,

Washington, D. C., Saturday, September 3d, at noon. The annual collation will take place at the Arlington Hotel at 9 o'clock of the same evening.

The eighteenth annual session of the Medical Society of Virginia will convene in Richmond, Va., on Tuesday, October 18, 1887, at 8 P.M. A general discussion on "The Choice of Anæsthetics" will be opened by Dr. Hunter McGuire.

Dr. Charles G. Stockton has been elected to fill the vacancy caused by the death of Dr. Rochester in the medical faculty of the University of Buffalo. A Department of Veterinary Medicine is to be added to the University.

SPECIAL ARTICLE.

PACHYDERMIA LARYNGIS.

Prof. Virchow, under this title, read before the Berlin Medical Society, at its meeting on July 27, 1887, a paper which gives his views of the pathology of the throat affection of the Crown Prince of Germany.

In opening his paper Professor Virchow remarked that it would ill become him to omit mention of the fact that his discourse was occasioned by the serious illness of the Crown Prince, which had so largely engaged public attention during the past few months. After alluding to his early studies of the anatomy of laryngeal growths, he described the boundaries of the pavement epithelium of the pharynx, as it extended upon the laryngeal structures; referring especially to the broad strip of pavement epithelium which passed over the region between the two arytenoid cartilages, and is thence continuous without interruption upon the vocal cords to their anterior extremities. He remarked that these sections of the larynx covered with pavement epithelium, when compared with portions of the digestive tract, showed a type approaching the cutaneous cells; that their characteristics were more or less cutaneous or dermoid. This was especially shown in the continuity of the flat epithelium of the skin, as it extended through the mouth into the respiratory and digestive tract.

The processes which form the objects of interest in this epithelial tissue partake largely of the character of chronic inflammation, in the course of which two morbid processes are especially noticeable, viz., *a*. localized swelling, generally limited to a single point; *b*. diffuse swelling. Both are excessive epithelial proliferation; in the first the cells do not change their type, but greatly increase as dermoid cells; in the second a diffuse proliferation of the superficial connective tissue, rather than of the epithelium, takes place. Both processes Virchow names pachydermia; the limited or localized form he terms "warty" pachydermia, or pachydermia verrucosa.

As a characteristic appearance on examination he finds at the posterior extremity of the vocal cord, where the processus vocalis of the arytenoid cartilage passes beneath the mucous membrane, at its emergence, a flat, oval swelling, which extends generally obliquely from behind and above downward and forward beneath the border of the vocal cord. These bodies are symmetrical, and are not the scars of former ulcers, but epithelial layers closely adherent to the subjacent cartilage, and probably undergoing an erosive-like process. In addition to this there is a diffuse process which extends over the entire surface of the vocal cords, and consists of a superficial layer of grayish, thick material, which is made up of epithelial cells. Microscopic examination reveals a papillary structure covered with epithelia. A further extension of the disease is found in the interarytenoid spaces; this occurs, however, infrequently. In this condition an important feature is the occurrence of masses of hardened fissured tissue called rhagades, resembling the hardened portions of cutaneous callus. By the movements of the parts these masses wound the surrounding tissues, producing the appearances of cancroid ulcers. He does not believe that an actual change into cancroidal tissue occurs.

The most salient point of warty growths upon ordinary examination, is found at the middle and anterior portion of the vocal cords, and in the anterior angle where the vocal cords meet.

The best described form of pachydermia is that in which the papillary element is least well marked, the growth consisting of epithelia only. Such growths are generally called papilloma, a name which Virchow considers an absurdity; he shows how it is equally applicable to various tumors, and wishes that it was rejected from the literature as meaningless.

The essential characteristic of papillary proliferation in the larynx he considers to be the proliferation and hardening of the epithelial elements. Epithelioma is a much more appropriate name for the growth, which should be subdivided into hyperplastic and heteroplastic.

The diagnosis is difficult, and it can only be determined by anatomical examination whether the growth is heteroplastic or cancerous, or only superficial epithelial proliferation. The latter consists of a growth of the epidermal epithelium, amidst which the papilla grows. Such symmetrical growths are often found in connection with nests of epithelial cells. According to Virchow, the verrucosities of the larynx are of epithelial nature, and were formerly called condylomata, but this name is now reserved for another form of tumor. Another gross error in the classification of these growths has been in calling them fibromata; when sections are properly made it will be found that in no instance does the connective tissue proliferate into the epithelium, but the growth is an epithelial proliferation. It is not difficult, by proper section, to study carefully the development of these tissues from nuclei, and from such observations the conclusion is reached that the disease pertains to the epithelium as such. Polyps may possess some of the characteristics of these growths, but not their combined peculiarities.

Virchow sums up his description as follows: In a certain portion of the larynx, caused by irritation

similar to that which exists on the external skin, two kinds of proliferation may occur which resemble chronic inflammation; one produces a warty growth, and one a diffuse, even swelling, which attacks the entire superficies. These resemble markedly the warts and diffuse swellings produced by irritation of various sorts upon the integument, causing a local increase of tissue. (In illustration of the differential diagnosis of these growths, specimens of lupus and papillary cancer were exhibited.)

Virchow's criterion of distinction between the papillary wart and the papillary cancer is the absence or presence of epithelial elements in the connective tissue. He considers all growths benign in which the normal demarcation remains at the base of the epithelial layer. Every trace of epithelium in the connective tissue he considers suspicious. When he finds beneath the boundary line of epithelium spaces filled with epithelial masses, then he recognizes the distinctive characteristic which stamps the formation as cancerous.

To determine the character of these growths, a thorough examination of the base of the tumor must, therefore, be made; when nothing foreign exists there, no matter what has developed on the surface, the growth is local and of a benign nature, nor will malignancy subsequently develop; but when beneath the boundary line spaces filled with epithelial cells are found, the growth is cancerous. It is evident that only comprehensive and properly made sections are available for diagnosis.

Recurrences of this papillary form of growth are frequent, and have been often observed. Repeated removals have succeeded in extirpating such masses. It is possible that such growths may spontaneously disappear, as do cutaneous warts. He has had no personal observations on this point, but others have observed such disappearance.

The full text of the paper will be found in the *Berliner klinische Wochenschrift* of August 8th.

REVIEWS.

Wear and Tear, or Hints for the Overworked. By S. Weir Mitchell, M.D., LL.D. Harv., Member of the National Academy of Sciences, President of the College of Physicians of Philadelphia, etc. Fifth edition, thoroughly revised. Philadelphia: J. B. Lippincott Company, 1887.

In the sixteen years which have elapsed since the first edition of this book was issued, the accumulation of property has removed a large number of Americans from the number of those to whom the author originally wrote. There will always remain, however, a large class engaged in mental labor with whom the struggle for existence often exceeds the limits of endurance. The problem of the conservation and direction of energy occupies not only the field of physics, but also that of neurology; and to those whose capital is nervous force, the book has proved a safe guide in avoiding the dangers of excessive labor. The book suggests several problems in American sociology, to whose solution his readers would gladly invite the erudition and facility of the author.

CORRESPONDENCE.

THE INTERNATIONAL MEDICAL CONGRESS.

In spite of the depressing influences o the heated term, busy preparations are going on by all concerned in the local management of the International Medical Congress. The office of the Secretary-General, Dr. Hamilton, shows tables filled with proof-sheets, titles and abstracts of papers, programmes, letters, etc., and medical men are constantly coming and going, seeking information on matters pertaining to the Congress. Dr. Hamilton showed me a closely printed pamphlet in small type, a proof copy, in which were embodied the titles of papers to be read and presented; it (the pamphlet) had already reached sixty-four pages, and the eleventh section, that of Ophthalmology, was not concluded, there being six more sections to be included, so that it would be impossible to give a fair idea of the material preparing without taking up a great deal of space.

So far, 338 foreign delegates are on the list as having expressed their intention of being in attendance.

The general sessions will be held at Albaugh's Opera House, which is centrally located on Fifteenth Street, just below Pennsylvania Avenue, and looks out on the grounds of the President's House and Washington Monument. It ought to be cool and well ventilated. Its seating capacity is about thirteen hundred, including the balcony seats; the floor, comprising what is known as the orchestra and orchestra circle, seats seven hundred and eighty. The stage is moderately large, and the acoustics are pretty good. The Sections have also been provided with suitable accommodations.

The programme for the meetings is about as follows:

Monday, September 5. General meeting at Albaugh's Opera House, beginning at 11 A.M. Forenoon: Organization of the Congress, report of Secretary-General, report of Chairman of Local Committee, Address of Welcome by Secretary of State Bayard, Address by the President of the Congress, and other addresses. The Sections will meet at 3 P.M.

Tuesday, September 6, 10 A.M. General addresses: First, Dr. Austin Flint, of New York, on "Fever: Its Causes, Mechanism, and Rational Treatment." Second, Dr. Mariano Semmola, of Naples, Italy, on "Bacteriology and Its Therapeutical Relations. The Sections will meet daily from 11 A.M. to 1 P.M., and from 3 P.M. to 6 P.M.

Wednesday, September 7, 10 A.M. General addresses: First, Dr. P. G. Unna, of Hamburg, Germany, on "The Relations of Dermatology to General Medicine." Second, Dr. G. Fielding Blanford, of London, on "The Treatment of Recent Cases of Insanity in Asylums and in Private Houses."

Thursday, September 8, general meeting at 10 A.M. General Addresses: First, Dr. A. Luteaud, of Paris, on "The Influence of Discoveries of American Surgeons on the Development of Gynecology in Europe." Second, Dr. Neudörfer, of Vienna, on "The Military Medicine of the Present and that of the Near Future."

Friday, September 6, general meeting at 10 A.M. for general business.

Saturday, general meeting at 10 A.M.; adjournment.

Although, as stated before, it is impossible to do justice

to the material to be presented at this meeting, I cannot avoid noting a few papers on interesting subjects accompanied by the names of prominent medical men from abroad. Thus, in the section on General *Surgery*, William MacEwen, of Glasgow, Scotland, will read a paper on "Brain Surgery." Edmund Owen, of London, has two papers on "The Surgery of the Hip-joint; Paracentesis of the Articulation in the Early Stages of Disease of the Hip-joint," and "The Distention of the Capsule in Disease of the Hip-joint." Dr. Ollier, of Lyons, has a paper on "The Results of Resection in an Orthopedic and Functional Point of View." Dr. Leon Le Fort, of Paris, on "Gradual Dilatation of the Urethra." Neudörfer, of Austria, has several papers to present, dealing chiefly with problems in military surgery; he is Sanitary Chief of the Fifth Army Corps. Sir Thomas Longmore has a paper on the soldier's equipment for field dressing of wounds in time of war. Dr. Joseph Ewart, of London, has a paper on "Cholera," and Dr. Frederick Esmarck, of Kiel, a paper on "Field Dressing of Gunshot Fractures of the Lower Limbs in Connection with Transportation."

In the Section on *Obstetrics*, Prof. Emil Ehrendorfer, of Innsbruck, Austria, has a paper on "Puerperal Fever." Dr. Thomas More Madden, of Dublin, one on "Puerperal Septicæmia." Dr. M. Sänger, on "Conservative Cæsarean Section." Kirch, of Italy, on the same. Dr. Goelson Duncan, of London, gives a case of Porro's operation, and Prof. Lazarewitch, of St. Petersburg, a new normal (?) forceps. Lawson Tait has also a paper on "Tubal Pregnancy."

In other sections we note a paper by Prof. Rosenthal, of Vienna, on "Experimental and Clinical Observations of Cocaine." Dr. D. Hack Tuke, of England, on the "Care of the Insane." Dr. John Battey Tuke, of Edinburgh, on the "Legal Relation of Epilepsy." A paper on "Massage," by Dr. Charles Weber, in the Section of *Therapeutics and Materia Medica*, one by Dr. G. Ludvic Hirschfeld, of Paris, on the "Inefficacy of Ferruginous Injections," and one on the "Poison of the Cobra," by Dr. T. Gnezda, of Berlin. Dr. Dudley Wilmot Buxton, of London, gives "Experimental Studies in Asphyxia." In *Otology*, Dr. B. Loewenberg, of Paris, has a paper on the "Treatment of Tinnitus Aurium." In *Anatomy*, Reginald Harrison, of Liverpool, on the "Bladder;" Dr. William Mitchell Banks, of Liverpool, on the "Wolffian Bodies." In *Diseases of Children*, Dr. E. Bouchut, of Paris, on "Tubage of the Glottis." In the Section of *Dermatology and Syphilography*, are papers by Mr. Jonathan Hutchinson, of London, Dr. P. G. Unna, of Hamburg, Dr. T. Colcott Fox, of London, and several other well-known foreign dermatologists. The Section on *Public and International Hygiene* is favored with papers by Thudichum, of London, Antoine Magnin, of France, Tommasi Crudeli, of Italy, Domingas Freire, of Rio Janeiro, Benjamin Ward Richardson, of London, Mapother, of Dublin, and others.

Unfortunately for the entertainment of the Congress, September is an unsatisfactory month, especially in Washington; as very few private citizens or government officials remain in the city during that month, so that comparatively few houses will be thrown open. The clubs have taken, so far, no active part in preparing for entertainments, and the usual visit to the public buildings, Corcoran's Art Gallery, and a trip to Mount Vernon, will about comprise the list. The new Pension Building, a vast structure, in an out-of-the-way place, looking like an old-fashioned factory of some kind, old-fashioned, because modern factories are built with some idea of appearances, has a fine space enclosed within its walls which will be used for the banquet. The trip to Mount Vernon will be made by the foreign guests on a man-of-war, placed at their disposal by the Secretary of the Navy. The other delegates will be taken at reduced rates on the regular steamer. On Sunday, September 11th, a special train will take the foreign guests, by way of Watkins' Glen, where a stop will be made of twenty-four hours, to Niagara Falls.

The cards of invitation have been prepared, and present some interesting features. The banquet card has on its back a succession of leaves from an artist's portfolio, depicting the Landing of Columbus, Birthplace of Washington, Signing of the Declaration of Independence, Surrender of Cornwallis at Yorktown, called "The Peace of 1783," Goddess of Liberty on Bedloe's Island, Grand Army Review in Washington in 1865, Inauguration of Governor Cleveland. On the other side are the words "The Committee of Arrangements Appointed by the American Medical Association have the Honor to Invite," etc. The Niagara Falls invitation has, as a centre view, the Horseshoe Falls, then panels showing Watkins' Glen, Seneca Lake, High Bridge, New York, and Washington City. The Mount Vernon invitation has a very excellent view of the house and tomb.

The Assistant Secretary of the Treasury, Mr. Maynard, has ordered the admittance free of customs duties of articles, books, instruments, etc., imported in good faith for the Congress, and not intended for sale. The Secretary General has forwarded a list of the delegates for this purpose.

WASHINGTON, D. C., August, 1887.

A DAY AT MOORFIELDS EYE HOSPITAL.

Moorfields is the Mecca to which all foreign ophthalmic surgeons find their way when visiting London. Founded as a special hospital in 1804, it grew rapidly into notice as a school for ophthalmic surgery under the guidance of John Cunningham Saunders, who first adapted the operation for cataract to the condition of infancy. Moorfields has always been famous for its staff of brilliant operators; probably the most brilliant was George Critchett, who died quite recently. To-day, Mr. Lawson is quoted as the dextrous surgeon—Mr. Couper the authority on refraction and the inventive genius of the institution, Messrs. Morton and Lang authorities on retinoscopy, Mr. Gunn the authority on obscure retinal affections, whilst Messrs. Hulke and Tweedy are the scientists. The enormous yearly attendance is startling, one sees gathered together a wealth of clinical material not found elsewhere, and to the student who is able to make examinations and appreciate this wealth the field teems with rich returns.

The number of attendances of 25,863 new patients (1886) has been 123,475. The in-patients admitted to the wards for operation have been 2118.

Opportunity is now given young men to study ophthalmology under the instruction of such able men as Messrs. Lang, Gunn, and Silwek, younger members

of the staff who have done much to advance this Institution as a medical centre.

Mr. Tweedy, the senior surgeon of the day, brought before the notice of the visiting physicians many interesting and striking cases :

Case 1.—Man, sixty years of age, who had been operated upon for cataract; the vitreous was fluid and in making the incision the lens became dislocated down and into the vitreous; by a slight quick stroke on the lower part of the globe the lens was returned to its place, it was then removed with a scoop. Inflammation of the iris followed, leaving a closed pupil. Inasmuch as the vitreous was fluid, Mr. Tweedy selected a small sharp-pointed knife which he passed through the cornea at its outer margin, and by gently passing the knife through the iris at its inner attachment was enabled to make a horizontal incision through its whole width without the loss of any fluid. The wound gaped widely and a good oval pupil was the result, good vision was expected. The after-dressing was atropia and cold compresses.

Case 2.—A patient who presented himself with symptoms of acute glaucoma. After an operation to relieve tension the eye rapidly grew worse, and to-day the eyeball was removed. Upon examining its interior a large sarcoma of the choroid was found. Upon the removal of an eyeball a sponge which has been thoroughly disinfected in a sublimate solution is pressed into the socket over the upper lid, and this held in place by a pressure-bandage—after six hours the first bandage is removed and a second sponge reapplied—absorbent cotton, saturated with sal-alembroth, is placed in the orbit. This cotton is antiseptic, prepared in a solution of perchloride of mercury and the chloride of ammonium.

Case 3.—Needle operation for recurrent capsular cataract. The point of interest in these operations is the use of the incandescent electric lamp. The room is made absolutely dark, then with the aid of a strong condensing lens the rays of light, which are intensely brilliant, are focussed on the eye—this renders the opaque lens capsule brilliantly white, which enables the operator to lacerate the capsule without difficulty, as the depth of the anterior chamber is the more easily measured by this procedure. The after-treatment is iced cloths for twelve hours.

Case 4.—Iridectomy after an injury, without cocaine. The surgeon held the eye fixed in position; with his left hand he grasped the entangled iris, which was cut off by the assistant. Atropia and cold dressings comprised the after-treatment.

Case 5.—Woman, fifty-one years. Iridectomy for acute glaucoma. Eserine was applied, but gave only temporary relief; as vision was rapidly failing, an iridectomy was resorted to. The operation was performed skilfully, making a large scleral wound with a narrow Gräfe's knife and excising a large piece of iris; some hemorrhage followed. Mr. Tweedy anticipated a good result.

In giving an anæsthetic the Moorfields surgeons "start" the patient (young or old) on chloroform following with ether—some surgeons prefer nitrous oxide gas followed by ether. No case of accidental death has as yet followed the "administration of these mixed anæsthetics."

Case 6.—Iridectomy for chronic glaucoma in a man fifty-three years. No remarks.

Case 7.—Removal of an incarcerated iris following a wound in the cornea produced by bursting of a ginger ale bottle. After-treatment atropia solution grains iv to ℥j, and cold applications with slight pressure-bandages.

All instruments used about an operation are disinfected in a solution of the bichloride of mercury 1 to 5000. After the removal of the iris it was found that traumatic cataract had developed which would be treated as the exigencies of the case required. Atropia solution and cold applications suggested.

Case 8.—Burow's operation for trichiasis. The upper lid was everted over a horn spatula and an incision made through the cartilage about two lines from the margin of the lid—this opening is made wide enough to admit the point of the scissors blade, which is passed forward beneath the tarsal cartilage and the orbicularis muscle inward, in two sweeps of the scissors the cartilage is severed—in like manner the outer half is cut. The narrowed opening is by this operation made wider and the eyelashes pushed forward, giving the patient great relief—usually one operation brings permanent relief. The operation may be repeated. Belladonna lotion dressings applied. No reaction generally follows.

Case 9.—Cataract operation on a patient sixty years old. The Moorfields incision, which is a semi-flap, was made, the iridectomy large—followed by a peripheral laceration of the capsule—the lens was easily delivered and the patient counted fingers at once. The eye was dressed in a style peculiar to Moorfields. First patent lint disks, upon which a coat of vaseline has been placed, are put upon the closed lids, over this absorbent (antiseptic) cotton—a light woollen bandage holding all in place, after twenty-four hours the dressing is renewed —in ten days the patient is allowed his freedom. By following this treatment but two per cent. of fatal cases occur, while it places the patient in more unpleasant surroundings—living in constant darkness for ten days —the English (London) surgeons do not like to change for the "rational method of treating cataract operations" now resorted to by the advanced ophthalmic surgeons on our side of the water.

Case 10.—Mr. Lawson followed by first bringing to our attention a unique case that he had operated upon ten days ago. The patient suffered from a marked congenital deformity of the upper left eyelid (coloboma), the cleft extended to the upper attachment of the lid, exposing the eyeball. It was not only unsightly, but the globe was constantly irritated by this exposure. The margins of the cleft were denuded, following this a vertical incision was made, one inch in length, extending from the outer canthus vertically, this allowed the cleft to be brought in apposition by silk sutures; the outer wound was subsequently brought together in like manner. The after-treatment consisted in the constant applications of lead water and laudanum. The result was all that could be desired.

Case 11.—The removal of a mature cataract in a patient sixty years old. The operator passed a knife through the anterior chamber, bringing its point out directly opposite its point of entrance—the withdrawal was made in one sweep, making a typical Gräfe incision. Mr. Lawson attributes much of his success in cataract operations to this movement of his hand; where many

to and fro movements are made the lips of the wound are serrated, and in consequence its perfect coaptation interfered with, allowing too much drainage, and preventing healing by first intention; microbes also finding an easy entrance. The iridectomy and delivery of the lens was perfect. The after-treatment did not vary from that described above.

Case 12.—Traumatic cataract in a man fifty years old. This was a particularly interesting case. Two weeks ago a small piece of steel penetrated the cornea, rupturing the lens capsule, producing a traumatic cataract. It was thought that the steel had buried itself in the interior of the globe,-which would eventually produce panophthalmitis, or engender danger to its fellow. The lens was first to be removed, to ascertain the location of the foreign body. A free corneal flap was made upward, followed by an iridectomy. In removing the iris, it was found that the lens was soft and pulpy; by slight pressure the lens matter was forced out, and with it came a piece of steel about one millimetre square; a clear black pupil was obtained, and the patient counted fingers. A good result was prognosticated.

Case 13.—Boy, aged twelve years, with proptosis of the left eyeball. This case is being watched with considerable interest, as the supposed cause of the displacement of the globe is due to an ivory exostosis. Nothing was done.

Case 14.—Was operated upon for convergent strabismus. The subconjunctival method was applied. The conjunctiva, which was rendered insensible by an application of a two per cent. solution of cocaine, was seized over the insertion of the internal rectus, a horizontal incision one centimetre in length, made through the conjunctiva and Tenon's capsule. The muscle was then elevated by passing a hook through this opening and underneath the muscle, with one snip of the scissors the muscle was detached. The tissues surrounding the insertion of the muscle were freely separated. The after-treatment was simple dressing. A full correction of the visual defect was made prior to the operation. In squints less than two lines, the visual defect is corrected; if this correction fails to remove the convergence, an operation is performed after six months, above this defect an operation is performed at once, plus the visual correction. The double tenotomy is rarely performed at the same sitting.

Case 15 came under the charge of Mr. Couper. The patient, a woman, fifty-two years old, had *immature* cataracts in both eyes, *vision equalled* $\frac{10}{CC}$ in each eye. The knife was passed through the cornea without the usual forceps fixation; after the removal of part of the iris, the anterior portion of the lens capsule was grasped with a Forster's forceps and detached, the lens delivered without difficulty. Since the introduction of Forster's method of removing the anterior half of the lens capsule, Mr. Couper has had a lesser number of recurrent capsular cataract operations to perform. Mr. Couper makes the following dressing: First the lids are thoroughly anointed with boracic acid ointment, followed with a covering of the above described antiseptic cotton-wool, over all a knit wool bandage, this bandage renewed in twenty-four hours; after one week, dry dressings made. The patient is tested for glasses after three to six weeks.

Mr. Couper called attention to the fact that he does not hesitate to remove *immature cataracts*, an experience dating over eight years gives him encouragement to continue.

Case 16.—Ten days ago the patient, a boy, aged seven, presented himself, having lamellar cataracts, and was operated upon at once by the needle method; to-day the soft lens substance was removed by suction, leaving the pupil clear. Before the introduction of Bowman's syringe, the nucleus of the lens was distinctly seen in the anterior chamber, looking hard and firm. It was broken to pieces by the action of the suction, and entered the mouth of the instrument without difficulty. Atropia solution and iced compresses constituted the after-treatment. The solution used in the suction instrument was one to twenty of carbolic acid.

Case 17.—Subacute glaucoma. An iridectomy performed four weeks ago, but at intervals tension increased to plus three, during this period paracentesis was performed. To-day the seventh operation was made. Tension disappeared at once. Sclerotomy may be resorted to. The after-treatment *nil.*

Case 18 demonstrated the value of large probes in dilating strictures of the lachrymal duct. Under this treatment the patient has been doing well—the epiphora has almost entirely disappeared.

The above series of cases will give your readers a correct idea of the average amount of surgical operations performed daily. In the out-patient department nearly three hundred cases were counted, suffering from all grades of disease from simple hypermetropia to inflammations of the most violent type.

L. WEBSTER FOX.

LONDON, July 27, 1887.

NEWS ITEMS.

THE HYGIENE OF SUMMER RESORTS.—The necessity for the enforcement of proper precautions in the sanitation of hotels, dwellings, and villages which are occupied during the summer only, is forcibly shown by the following case in point, as given in the *Sanitary Engineer* of August 6, 1887:

Another instance of criminal carelessness and ignorance has been brought to light in the matter of the drainage and water-supply of a summer resort—a condition of things for which the proprietors should be held pecuniarily responsible in damages for the sickness resulting, and criminally if fatal results ensue. Investigation at the Conanicut Park Hotel, near Providence, R. I., where an outbreak of fever resulted in an abandonment of the house by the guests, showed that the well was situated under the floor of a room adjoining the laundry; two earthen drains, with the usual leaky joints, passed within a few feet of this well, making a junction just beyond it, so that the well, with considerable ingenuity, was located just within the angle, in order that every possible facility might be afforded for its receiving the contents of these leaky drains. A removal of the floor revealed a mass of filth from the drains running into the well. Of course, the business of this hotel for this season is practically killed. The question, however, which is of importance, now is, How many other summer resorts have their wells or drinking-water cis-

terns in close proximity to drains now defective or likely to become so?

The Providence *Journal* says the Rhode Island State Board of Health has no funds to enable it to make the necessary inspections of such resorts. If this is true, it is to be hoped that such will not be the case another year, and as a measure of protection every State Board of Health should endeavor to secure legislative authority and funds to make such inspections, and also to prepare a plan showing the drainage system of all summer hotels, including location of wells, cisterns, and cesspools, all to be drawn to a scale. A copy of this plan, certified to by State health authorities, should be required by law to be conspicuously posted in each summer resort. There is now sufficient intelligence in these matters outside the keepers of such establishments to detect and cause the correction of any serious defects; publicity, therefore, would be an effective safeguard.

It is quite as important in these days that such information should be posted for the information of the public as that certificates of boiler inspections should be displayed on all steam vessels. Indeed, we believe polluted water destroys more lives than steam-boiler explosions.

Bleeding in Sunstroke.—At the Chambers Street branch of the New York Hospital, a patient suffering from sunstroke who had a temperature of 108.8° and had had violent convulsions for twelve hours, was recently bled to the extent of eighteen ounces, with the effect, apparently, of saving his life; although twice afterward the temperature went up as high as 105°. A case very similar in character which was brought to the same hospital some time since, and in which bleeding was not resorted to, terminated fatally.—*Boston Medical and Surgical Journal*, August 4, 1887.

The Illinois State Board of Health.—The Illinois State Board of Health did a piece of work at its last meeting which required courage. Under the new law they are permitted to grant licenses to itinerant venders of medicines for a fee of $100 a month. At its meeting there were eight applications for such licenses, backed up by powerful political influence, which would have brought in $800 each month into the board's coffers. They were all denied licenses, however, though to an outsider, it looks like heroic application of the law.—*Sanitary News*, August 13, 1887.

Bromidia.—The United States Circuit Court has granted a perpetual injunction restraining Gross et al. from manufacturing or selling any medical preparation under the name of "bromidia" or any colorable imitation of it.

The Cholera.—Three fatal cases of cholera are officially reported as having occurred this week at Malta. The authorities appear to be doing what they can to prevent the spread of the disease by removing suspicious cases to the lazaretto, and by thoroughly cleansing out the houses. In consequence of the existence of the malady on the island, quarantine is imposed at Gibraltar and Madrid on vessels arriving thence. At Catania the disease during the last week has not, it appears, diminished in violence, from fifteen to twenty deaths being recorded daily. The disease has extended to the prisons and monasteries. In the provincial towns (especially at Anderno, Paterno, Francofonte, and Cerami) the epidemic seems on the increase, whilst more favorable reports come from Syracuse and Calabria. According to a recent telegram from Bombay, cholera prevails to a serious extent at Peshawur, where 300 deaths occurred from the disease during July.—*Lancet*, August 6, 1887.

Laryngology in Berlin.—The new Laryngological Clinic under Dr. Fränkel is now in full work, and is attended by a large number of patients. It is fully recognized by the authorities as a place for study, being replete with every instrument and convenience.—*Lancet*, August 6, 1887.

Broca's Statue has been recently taken from the Salon and erected at the corner of the boulevard Saint-Germain and the street of l'École-de-Médecine.

The Individual Bath in Public Hygiene.—Dr. Rohé is quoted as follows upon this subject by *Science* of July 15, 1887:

Public, like private, bathing institutions, must make provision for individual baths. Large pools, in which many persons bathe at once, fail to answer the requirements of sanitary science or of public decency. A French army surgeon, Duval, has overcome this difficulty, and now both the French and German soldiers have proper facilities for bathing. The latter are required to bathe every week, the government furnishing the bath-room, warm water, soap, and towels. In our army and navy no steps have been taken to introduce this reform, although Dr. Billings has shown its feasibility. Dr. Lassar, of Berlin, has demonstrated the practicability of separate bath-rooms in connection with public bathing, and has been urging the extension of the military system to the civil population, so that every German may have his weekly bath. He gives excellent illustrations of the practical benefits to be derived from the adoption of such a system. At the white-lead works in Ehrenfeld, the eighty employés are required to bathe weekly, the facilities being furnished by the proprietor. In the first year, 1884, the sickness was reduced twenty per cent., and in 1885 it was reduced still lower, fifty per cent. In certain dye-works in Berlin, ten rooms, containing shower-baths, have been provided for workmen and their families, and for all who desire to use them. In Göttingen, with a population of 21,000, of which number 3000 are children who attend the public schools, baths are fitted up in the basement of one of the schoolhouses. A class of fifty can bathe in an hour. Each child has the opportunity of bathing once in two weeks, and seventy-five per cent. of the children avail themselves of it. The authorities and teachers are unanimous upon the point that the system is of great benefit to the children, not only from its direct sanitary advantage, but from the habits of cleanliness formed, to which they are likely to adhere through life. The only cities in the United States having public baths are, Boston, with 17; New York, 15; Philadelphia, 5; Brooklyn, 3; Cleveland and Hartford, each 1; and Buffalo, the number not given. In New York, 3,431,086 persons bathed from June to October in 1883; during the same time in Boston, 959,763; and in Brooklyn, 225,885. In eighteen

cities where there are no public baths, only about twenty-three per cent. of the residences are supplied with bath-tubs.

PELLAGRA IN ITALY.—This disease has assumed serious proportions in Italy. It is attributed to the poor bread commonly used, and has affected the inhabitants of the provinces of Lombardy and Venetia with especial severity.

The bread is coarse, ill made, badly baked, and fresh but once in five days; it can not be digested by the stoutest stomach.

The government is preparing new quarantine and preventive laws against the disease. In the Exhibition of Millers and Bakers at Milan, the products of infected districts were marked by cards of warning. In the last five years numerous hospitals have been opened for those afflicted with pellagra; but its ravages among the very poor have been extensive.—*L'Abeille Médicale*, June 13, 1887.

ARTICULATED AND SIGN LANGUAGE.—When we wonder at the rapidity with which deaf-mutes spell out their words on their fingers, we are apt to feel that this invention has really diminished the disadvantages of this class of persons almost to a minimum. That such is not the case is vividly suggested by the statistics which a teacher of the deaf-mute has had the patience to gather. He has counted the average number of words which a pupil in his school wrote or spelled on the fingers per day, and finds it to be 1118; the teacher similarly employs 216, but uses signs equivalent to 861 words daily. It has been estimated that a mother talks 27,000 words to her child in a day. Making due allowance for the habit of forming only parts of sentences which the deaf-mutes cultivate, and also for the suggestiveness of the sign language which hearing people really also use in the form of an expressional accompaniment), the comparative meagreness of the deaf-mute's conversation and slowness with which his mental food can be brought to him, are plainly evident.—*Science*, July 8, 1887.

A NEW WINE.—A Frankfurt (German) firm has produced a wine made from whortleberries which has been extensively tested and examined by German chemists. Its percentage of alcohol is less than that in grape wines, and its purity has led to its use in the army and navy, and its quality and refreshing taste have led to its introduction into a number of hospitals.

THE IRRIGATION SYSTEM OF DISPOSING OF SEWAGE.—The irrigation system of sewage disposal has been greatly extended in Germany. In Berlin it has given great satisfaction, the sewage of 900,000 people being carried to irrigation fields, and the water which drains off being submitted to chemical examination for evidences of pollution, which were discovered but once during an entire year. The objection that this system of sewage treatment is not applicable in cold climates is invalid, as is shown by the results in Pullman, Ill., and in Dantzig, Germany. Birmingham, England, with a population of 600,000, has adopted the irrigation system, and the income realized during 1885 from the sale of stock and produce from the sewage farm, amounted to over $100,000.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM AUGUST 16 TO AUGUST 22, 1887.

BAXTER, J. H., *Colonel and Chief Medical Purveyor.*—Ordered to proceed from Washington, D. C., to New York City, on public business, and on completion thereof to return to this city.—*S. O. 187*, par. 5, *A. G. O.*, August 13, 1887.

BAILY, JOSEPH C, *Lieutenant-Colonel and Assistant Medical Purveyor.*—Granted leave of absence for one month.—*S. O. 191*, par. 10, *A. G. O.*, August 18, 1887.

WOLVERTON, W. D., *Major and Surgeon* (Washington Barracks, D. C.).—Granted leave of absence for twenty days.—*S. O. 174*, par. 3, *Division of the Atlantic*, August 16, 1887.

TREMAINE, W. S., *Major and Surgeon.*—Found incapacitated for active service by an Army Retiring Board, and extension of leave of absence on account of sickness still further extended until further orders.—*S. O. 192*, par. 9, *A. G. O.*, August 19, 1887.

BYRNE, CHARLES B., *Captain and Assistant Surgeon* (Washington Barracks, D. C.).—Granted leave of absence for one month, with permission to apply for an extension of one month.—*S. O. 174*, par. 4, *Division of the Atlantic*, August 16, 1887.

DIETZ, WILLIAM D., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for two months, with permission to apply for an extension of one month.—*S. O. 189*, par. 7, *Headquarters of the Army, A. G. O.*, August 16, 1887.

MCCAW, W. D., *First Lieutenant and Assistant Surgeon.*—Relieved from temporary duty at Fort Riley, Kansas, and ordered to his proper station, Fort Leavenworth, Kansas.—*S. O. 84*, par. 3, *Department of Missouri*, August 15, 1887.

JOHNSON, HENRY, *Captain and Medical Storekeeper.*—Ordered, in addition to his present duties, to take charge of the office and perform the duties of Acting Assistant Medical Purveyor in New York City, during the temporary absence on leave of Lieutenant-Colonel Joseph C. Baily, Assistant Medical Purveyor.—*S. O. 191*, par. 11, *A. G. O.*, August 18, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR TWO WEEKS ENDING AUGUST 20, 1887.

LONG, W. H., *Surgeon.*—Leave extended six days on account of sickness, August 13, 1887.

FESSENDEN, C. S. D., *Surgeon.*—Leave extended thirty days, on account of sickness, August 19, 1887.

GODFREY, JOHN, *Surgeon.*—Granted leave of absence for thirty days, August 17, 1887.

GLENNAN, P. H., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, August 18, 1887.

MCINTOSH, W. P., *Assistant Surgeon.*—Granted leave of absence for twenty-five days, on account of sickness, August 17, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 20, 1887.

ROBINSON, S., *Medical Inspector.*—Placed on Retired List.

GARDNER, J. E., *Passed Assistant Surgeon.*—Detached from Naval Hospital, Norfolk, Virginia, and ordered to the Fish Commission Steamer "Albatross."

MARTIN, WILLIAM, *Assistant Surgeon.*—Ordered to Naval Hospital, Norfolk, Virginia.

VAN REYPEN, W. K., *Surgeon.*—Appointed Medical Inspector from August 16, 1887.

SIMONS, M. H., *Passed Assistant Surgeon.*—Appointed Surgeon from August 16, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

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ORIGINAL ARTICLES.

PAINLESS TIC OF THE FACE.

TREATMENT BY FREEZING WITH RHIGOLENE SPRAY.

BY S. WEIR MITCHELL, M.D.,
MEMBER OF THE NATIONAL ACADEMY OF SCIENCE.

THIS local affection of the muscles of the face supplied by the seventh pair of nerves, or by some one of its branches, has interested me at different times of my clinical life, and I have, at various periods, sought to treat the malady by as many forms of medication, but always in vain. Recently my attention has been re-directed to the matter in consequence of my having seen three cases of facial tic, and having been so fortunate as to cure one of them, and to relieve another.

Naturally one looks to the cause of a disorder of this kind for aid in directing methods of treatment, but the causes spoken of by authors such as Ross, as influenza, tumor at the base of the brain, aneurism of the vertebral artery, inflamed glands in the vicinity of the stylo-mastoid foramen, abscesses of the parotid, caries of the temporal bone, etc., have none of them ever furnished me with an example of painless tic due to direct irritation of the facial nerve in some parts of its course. Localized tic of some of the muscles of the face, I have, of course, seen as a rare result of intracranial disease. Neither have I seen it as due to reflex irritation conveyed by the fifth nerve, and, although I have searched every case with care, neither carious teeth, nor irritations of the eye, nor disease of the antrum have enabled me to connect any of them with facial tic as cause and effect. I have, it is true, twice seen painful neuralgia of the face converted into neuralgia with painful tic, and ending in a cure of the neuralgia, but leaving a persistent painless tic. I have also seen spasm of the sterno-cleido-mastoid extending by degrees until it produced a unilateral convulsive spasm of the face. But this seems to be clinically distinct from what is ordinarily known as painless tic.

The symptoms of the clonic form of facial spasm of which I am now speaking have been over and over again described, but there remain, nevertheless, some points in connection with this disorder which I do not see spoken of in the descriptions given by the various authors who have written on this subject.

I find in my note books records more or less complete of nine cases: Five existed on the left side alone, two on the right side alone, and two were found on both sides, but I think it is more common than these numbers would indicate to find it existing on both sides. The affection is, of course, far more violent in some cases than in others. It may vary from the slightest twitching of the eyelids, in which such twitchings are almost a normal phenomenon, so frequent are they in nervous people, to the most extreme excursions of the large muscles and skin on one side of the face, occurring at intervals of a few seconds, or some minutes, and in certain cases being frequent during the day, in others coming in sets of spasms, so to speak, lasting for twenty or thirty minutes, or for one or two hours. In all of my cases these spasms ceased during sleep, and commonly did not recur until some little time after the patient had passed out of that state. I have once seen a case of these paroxysms originating at each attack with pain, of which Ross speaks as an occasional thing.

I have traced with care in some of my cases the onset of the attacks in individuals intelligent enough to have noted and remembered how they started. In nearly all in which I could obtain a history the spasm seems to have originated in the muscles around the eye or under the eye, and to have spread thence through the other muscles of the face. It has been usually observed that these actions do not damage volition except during the actual occurrence of the convulsive acts. In some of my cases of extremely violent spasm the facial lines on the side affected seem to have been deepened. In two cases, at least, apparently not differing from the others, there was undoubtedly some slight defect of voluntary power on the side of the spasm, and the face exhibited that curious peculiarity sometimes seen in slightly paralyzed persons where, when they smile the smile begins on the sound side and follows a little more tardily on the other. The most careful examination has never revealed to me any sensory changes as to touch on the side affected by tic. Nor have I in a single one of the general cases of tic been able to suppress it by pressure on any of the points at which nerves emerge or elsewhere, as may so often be done in that peculiar form of facial spasm which affects the lids, causing a long-continued closure, such as indeed may endure for weeks. Since my attention has been redirected to this subject, I have examined also the electric conditions of the muscles on both sides of the face in people affected on one side, and have observed, in two instances at least, a far more ready response to induction currents on the side attacked by spasms than upon the other.

I have never had the good fortune to see one of these cases at its outset, and probably few have been called to treat it at that time, since commonly it begins with some slight twitching, as I have said, around the eye, and extends thence to other muscles of the face and is not seen by the physician for treatment until it has become quite extensive enough to be a source of anxiety or annoyance.

Facial tic of the type now under consideration is apt to be increased by moderate emotion, as meeting strangers and becoming conscious of observation. Extreme emotion will occasionally suspend it, as it will the wildest local chorea, of which I have elsewhere related a striking case. It is, I think, unnoted in the classical accounts, that in some cases mastication, deglutition, laughter, or talking are competent to cause attacks in persons affected with tic. I observed, also, that the first jet of rhigolene spray caused a violent facial spasm in two of my cases. In some tic patients walking brings on an attack, and any violent motion does the same.

If we conceive of a motor face centre as in a state to discharge energy at any moment, and needing but the least irritative contribution to cause spasm, we shall have a fair mind image of the state of things described. The act of speech, mastication, laughter, all motion in fact, all emotion, the sudden chill of rhigolene, give rise to overflows of nerve energy which sweep over the whole nervous system, and contribute enough added stimulant to excitable centres to occasion spasmodic action in related muscles.

This seems to me to be the mechanism by which we may explain the action of motion, sensation, and emotion in bringing on the attacks of tic in persons subject to it. Like overflows seem to be able to reinforce already irritated sensation centres so as to cause pain, because in trigeminal neuralgia mastication, speech, and laughter seem all to be capable of suddenly bringing on pain fits.

As one of the curiosities of the subject, I may add that the disease is sometimes suspended by a grave, intercurrent malady—as pneumonia—and sometimes cured as by typhoid fever. It has been my lot to see many bad cases of tic, of some of which I have kept notes, but I have never cured, or greatly aided, a case of long standing which was not due to hysteria.

I have never been forced to stretch the facial nerve as a remedy, but have seen an example of perfect success in a patient of my colleague, Dr. Sinkler. The operation by Dr. Wm. W. Keen was done more than three years ago, and to-day there is no trace either of paralysis or of spasm. There are, however, many reasons why people shrink from this somewhat serious operation, and there are varieties and mild forms of the disorder in which one naturally hesitates to resort to the knife. Dieffenbach's operation, in which he divided subcutaneously all the muscles affected by spasm, seems to me to be a method which should not be allowed to go out of use, as he is said to have had with it good success. For my own part, I have used all the ordinary remedies mentioned in the books, but have failed with one and all.

A few months ago I saw in a middle-aged lady a case of unilateral facial spasm, which set me to thinking afresh whether I might not be able to relieve her, and it then occurred to me that it might be possible to lessen the conductibility of the facial nerve by other means than stretching it, and that if I could freeze it where it spreads out on the face I might effect some good in this disagreeable malady. A little reflection, or, indeed, the use of my own memory, would have told me that with the means employed I should not be able to freeze so deeply as to produce what I expected, a congestion of the nerve I meant to freeze.

By placing a finger within the cheek and freezing the outside with the spray, it is easy to discover, as I myself found, that the deepest freezing possible with rhigolene does not extend through the thickness of the cheek, so that my expectation of thus directly affecting the nerve was futile, and any explanation founded upon a belief that the nerve was frozen must be laid aside. Whatever effect I did produce—and it will be allowed that it was somewhat interesting and remarkable—must have been due to a quite superficial freezing, and probably to reflex effects exerted through the trigeminus.

The first case in which I employed this agent was that of Mrs. B., aged sixty. The lady applied to me on November 4, 1886, the victim of a painless tic of the right face, which occurred at intervals, and had lasted for four years; never absent for more than half an hour of the waking day, it returned in spells, which persisted a few seconds at a time, and repeated themselves about fourteen times in a minute, after which there was apt to be a period of rest. The excursions of the face were most extreme, and seemed to affect all the muscles of the face so as to distort it for a time, closing the eye on that side in a most inconvenient fashion. Absent during sleep, it returned within an hour after waking, and, like neuralgia of the fifth nerve, was apt to be brought back or increased by the acts of talking, laughing, or eating. The lines of the face on the side of the spasm were a little more deeply marked than on the other, and the faradic reactions were distinctly better. She was somewhat sallow, but her blood count showed no marked anæmia, and, except an occasional trace of albumen in the evening, her urine was without casts. As to the cause of this unpleasant malady, I could not even make a reasonable guess; nor was there in the state of her teeth, her eyes, or her general health anything which explained it. I should add, as regards the spasm, that it was not capable of being reinforced by distinct muscular acts, nor did it seem to me, though of this I was not sure, to be competent to reinforce the knee-jerk.

After using the spray for the first time, she returned the next day, telling me that for two hours after its use there had been no spasm of the face. After five sprayings, on successive days, the face ceased to make any violent movement, the spasms became less and less severe, and, after fourteen applications, were confined entirely to the muscles around the eye, which ceased now to close that organ convulsively. At this time, having satisfied myself of the value of the local remedy used, I began to give tincture of chloride of iron internally, and malt extracts for the purpose of improving general nutrition. After twenty freezings had been used on successive days her condition was so satisfactory that she declared the spasms rare even under the eye, not more than a dozen times a day, when usually their recurrence could be traced to the act of mastication, or, at all events, to eating. She

was now absent for seventeen days, and, on her return, exhibited no change for the worse. For a few days the freezing was renewed, when I again allowed her to abandon the spray, as she declared herself entirely satisfied with the result, even if no larger good were gained. I directed her, on her return home, to apply ice and salt to the face daily over the region of the *pes anserinus*. This, however, made her face so very sore that she had to poultice it at one time, and, after twenty applications, at various intervals, she abandoned the use of this form of cold.

On May 2d, of this year, she returned to me in very good condition, certainly very much improved in general health and appearance, and with so small an amount of spasm as to satisfy her that no further treatment was necessary. I advised, however, that the spray should be applied by her physician thrice a week, but as long periods had elapsed without any form of application of cold, it seems probable that we may reasonably expect her to remain relieved. This case was valuable to me, and interesting because it was the first time I had, in a large experience, succeeded in relieving a facial tic.

In the second case, that of a lady, aged sixty-nine, I was less fortunate, perhaps because the malady had lasted so long. It began in 1878, under the left eye, and extended thence without pain or numbness. It was growing worse, and occasionally of late awakened her in the morning, and was now especially apt to recur with increasing violence if she was tired from any cause; talking and eating both seemed to provoke attacks. When she first applied to me she was rarely free from spasm for more than fifteen minutes at a time during the waking day. Her attacks occurred, as a rule, every two or three minutes. They were large spasmodic movements, enduring about fifteen seconds, during which time the face was drawn violently to the left, the lids quivered with a fine tremor, and there was a complete closure of the left eye, which happened, unfortunately, to be by far the better organ of the two. There was a slight extension of the spasm to the skin and muscles of the neck on the left side. The facial lines were less distinct on the left, the right eye was myopic and astigmatic, but competent correction had not at all relieved the spasm.

In this distressing case rhigolene spray was used assiduously seventeen times. No better effect was obtained than so far to lessen the spasm as to prevent, up to this time, the constant closure of the eye during the attacks. Beyond this I could see no gain, although she herself, and her family, insisted that the attacks were rather less frequent and less violent.

I should have preferred to wait for other opportunities before publishing the successful result of a single case; but painless tic, severe enough to seek aid, is rather rare, and I, therefore, give this example without claiming for the spray any more than what is here set forth. No doubt others will test its value, and we shall soon know if mine was, for some reason, but a mere piece of good fortune.

A word as to the method of using the spray. Rhigolene is by far the best agent, far better than ether, and it is possible that in sudden freezing we have a therapeutic means too much neglected. Used alternately with heat, it certainly is of value in neuritis, and certain neuralgias.

When employing the spray for tic, I use it over the expansion of the facial, and over the exit points of the fifth nerve. The reaction is intense, and the part sprayed remains deeply flushed. When it becomes sore, it is only needful to avoid the tender region for a day or two.

The nature of the influence thus exerted, and probably affecting most the sensitive nerve, is but a matter for speculation. It is some time after the spraying before the maximum effect is obtained in the way of lessening the spasm, and this fact reminded me of the interesting results obtained by freezing the skin in birds, when often ten minutes elapsed before the convulsive acts thus produced in birds were to be seen. No such extreme phenomenon follows the use of the spray in man or quadrupeds, but, without doubt, even in these surface freezing must profoundly affect the centres.

OBSERVATIONS ON THE ACTION OF STENOCARPINE,

THE NEW LOCAL ANÆSTHETIC AND MYDRIATIC.

By EDWARD JACKSON, M.D.,

ADJUNCT PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

After Koller demonstrated the possibilities of local anæsthesia as produced by cocaine, various other substances, as brucine, lewinin, and apomorphine, as well as other alkaloids closely allied to cocaine, were announced by different observers as possessed of somewhat similar powers. But all failed to make good their claims to consideration alongside of cocaine; the latest, drumine, having proved in the hands of others utterly destitute of the powers ascribed to it by its discoverer. The discovery has now been announced of an alkaloid, said to be obtained from the leaves of a tree common in Louisiana; which certainly equals, and perhaps surpasses, cocaine in its power to abolish the sense of pain in the part to which it is applied.

The story of the discovery is, that Mr. M. Goodman, V.S., having applied to the fetlock of a horse a poultice made, by chance, of these leaves; subsequently made a free incision into the part without eliciting any evidence of pain. He furnished some of the leaves to Dr. Allen M. Seward, who obtained therefrom an alkaloid, a two per cent. solution of which caused local anæsthesia in the eye of a cat. Some of this solution was placed in the hands of Dr. J. Herbert Claiborne, who found that it produced anæsthesia in the eye of the rabbit and of man; also of the mucous membrane of the nose, and of the skin. That it produced wide dilatation of the pupil, and in some cases a diminution of intraocular tension, and slight dulling of the sensibility of the tympanic membrane. Dr. Claiborne published an account of the drug, and the results obtained from its application, in the *Medical Record* of July 30, 1887.

After this Dr. H. Knapp experimented with it,

applying the same solution to the mucous membranes of the eye, nose, throat, urethra, and rectum, producing anæsthesia in all of them. Hypodermatically it produced local anæsthesia of the skin, and a drop applied to the glans penis had the same effect; but in Dr. Knapp's hands external application to the healthy skin gave uniformly negative results. This I shall refer to presently. The injection of it into the cellular tissue of rabbits caused "violent attacks of tetanoid convulsions in which opisthotonus was a prominent feature," recurring every ten to forty seconds, for some fifteen minutes, but followed by complete recovery within an hour. The amount of the solution thus used to produce these symptoms varied from five to twenty-five minims. Ten minims injected directly into a vein of a rabbit's ear caused fibrillary convulsions, or tremors, of the front part of the body, and death in ten seconds. "The picture furnished by these experiments bears the greatest resemblance to that of strychnine poisoning." But "chemical tests for the detection of strychnine," applied to the drug, "proved negative" (*Medical Record*, August 13, 1887).

After reading Dr. Claiborne's account of it, I obtained some of this two per cent. solution of the drug. It was clear, of a faint brown tint, and had a taste distinctly bitter, but nothing like the intense bitter of quinine or strychnine. A few seconds after its application to the tongue and lips there was a peculiar sensation of numbness precisely similar to that produced by cocaine, but more intense than that caused by the four per cent. solution of the latter drug. No application I have yet made to the human subject has produced constitutional symptoms; but not over four minims of the solution have been used in any one case.

One drop, a half minim, of the solution, was placed in my left conjunctival sac. It caused smarting more noticeable than any similar application of a four per cent. solution of cocaine, but still not severe, and passing off in a few seconds. Succeeding this there was the feeling of "stiffness," "dryness," or "coldness" of the lids, which cocaine produces, and immediately a notable widening of the palpebral fissure, as compared with that of the other eye. As soon as I could test it, within two minutes and a half, there was complete anæsthesia of the conjunctiva and cornea. I pinched up the conjunctiva with fixation forceps without any sense of inconvenience, but dragging so as to pull on the subconjunctival tissue still caused pain.

In 10 minutes such dragging caused no pain.

At 15 minutes the anæsthesia was still complete, and the pupil just beginning to dilate. The width of the centre of the palpebral fissure, was in the right eye, 10 millimetres; in left, 11 millimetres.

20 minutes. Anæsthesia less complete. Diameter of pupil, which was 3 millimetres to start with, is now, by the same light, 4¼ millimetres. Power of accommodation reduced from the normal, 8, to 7.50 dioptres.

30 minutes. Pupil in bright light 8 mm., in darkness 9 mm.

40 minutes. Anæsthesia nearly gone. Pupil fixed, 9 mm. in diameter. Palpebral fissure as before. Accommodation 5.50 D.

60 minutes. Anæsthesia entirely gone. Pupil unchanged. Accommodation 3.50 D.

85 minutes. Accommodation 2 D.

3 hours. Accommodation 0.50 D.

6 hours. Palpebral fissure as before. Accommodation 0.50 D.

12 hours. Pupil unchanged. Palpebral fissure still wider than the right, but the difference less than before. Accommodation 0.75 D.

24 hours. Palpebral fissure equal in the two eyes. Pupil in bright light 8 mm., in the dark 9 mm., contracts quite notably with strong convergence. Accommodation 3 D.

48 hours. Pupil 5½ mm. in light which makes the right pupil 3 mm.; dilating to 7 mm. in darkness. Accommodation 6.50 D.

3 days. Pupil under conditions mentioned above 4½ and 6½ mm. Accommodation 7.25 D.

4 days. Pupil 3¼ and 6½ mm. Accommodation 7.75 D.

5 days. Pupil still a little larger than its fellow; and accommodation perceptibly weaker than in the right eye.

6 days. Recovery complete.

Instillations of the same solution in the eyes of sixteen other persons, seven males, nine females, varying in age from five to fifty-two years have in every case caused the same anæsthesia; complete within one, two, or three minutes, and passing off mostly within a half hour. In all, the palpebral fissure was notably widened, the pupils widely dilated and fixed; and the power of accommodation very nearly, or quite, abolished by a single instillation. When the instillation was repeated the accommodation was always entirely abolished. When no other mydriatic was used, recovery of the accommodation and pupil was almost complete at the end of three days. That is, it had reached that stage where it is commonly spoken of as complete, and where its incompleteness cannot be detected except by comparison with the fellow eye kept in a normal condition. Dr. Claiborne speaks of recovery, in the trial made by him, as complete on the third day.

In three cases the drug was used to paralyze the accommodation, for the purpose of determining the refraction. In all it answered the purpose satisfactorily; and in one the subsequent use of duboisine revealed no additional hyperopia.

In four cases it was used simultaneously with duboisine (after the methods given for cocaine in my paper on that drug in THE MEDICAL NEWS of Aug. 27, 1887); in three cases it was so used with homatropine; and in one with hyoscyamine; and in all it caused a wider dilatation of the pupil, a dilatation very noticeably wider, than did the other mydriatic.

In no instance could I satisfy myself that it produced any change in the degree of intraocular tension; although I sometimes suspected it slightly decreased it. In no case did I perceive those corneal changes which I have noticed after the equally free use of a four per cent. solution of cocaine; and which are described in the paper above referred to. In these normal eyes, and in three eyes suffering from acute catarrhal conjunctivitis, there seemed to be less blanching of the conjunctiva than I would expect to see from the same use of a four per cent. cocaine solution.

Hypodermatically in the forearm one and a half grains of the solution caused complete insensibility of an area about four by eight millimetres in extent,

reaching mainly from the seat of injection toward the extremity of the limb. The anæsthesia was noticed instantly, but seemed to extend its area for about ten minutes. It disappeared in half an hour.

Applied externally to the skin it caused complete anæsthesia. This was tried four times on the flexor aspect of the forearm, and on the back of the hand. The method of application was simply to moisten the spot and keep it continually moist with the solution. The anæsthesia was very marked in ten minutes, but continued to increase slightly for half an hour. At the end of that time I could plunge a needle into the skin without the slightest sensation. In one of these trials on the flexor surface of my own forearm, at the end of ten minutes I commenced an incision; and keeping the blood wiped away and the surface continually moist with the solution, completed it within five minutes more, to the depth of three millimetres, without the slightest unpleasant sensation, either at the time or afterward. The healing was normal. In this respect my observations are directly opposed to those of Dr. Knapp, and in accord with those of Drs. Claiborne and Seward. I think Dr. Knapp's experience may be accounted for in one of two ways. First, the anæsthesia, although absolute, is in my experience very superficial. By plunging the point of the needle somewhat deeply, one may feel it pass from the layer anæsthetized into one in which it causes the usual degree of pain.

To make a painless incision in tissues anæsthetized in this way, one must do it by repeated superficial cuts with the knife, keeping all the time the cut surface bathed with the solution. Possibly, Dr. Knapp made his first incision or plunged his needle too deeply, passing into the underlying tissues still acutely sensitive. But it is more probable that he entirely prevented the absorption of the drug by preliminary treatment of the skin, adopted doubtless for the purpose of facilitating it. He washed the skin with soap and water. The writer tried washing the flexor surface of his forearm with soap and water, and then immediately applied the drug in the way above described. After half an hour no anæsthesia had been produced, although the surface was covered by the sticky residue left by the drying of the solution. The rationale of this is very simple, a portion of the free alkali of the soap probably remained adherent to the skin and promptly precipitated the alkaloid from the portion of the solution that came in contact with it. Such a solution is very sensitive to the action of a free alkali. The simple blowing upon this solution or a similar solution of cocaine, of air containing free ammonia, quickly renders it milky with such a precipitate. In the trial mentioned, when the solution of the drug had failed to produce anæsthesia at the end of the half hour, I stopped its application, and placed on the surface covered with its residue, a dilute acid solution, and in ten minutes had quite a notable anæsthesia.

Upon frogs this drug acts as a violent depressomotor poison; reflex movements continuing somewhat after the abolition of voluntary movements. In my first trial of the drug on the frog, I injected three-fourths of a grain of this solution into the subcutaneous tissue, and replaced the animal in water. It swam easily for an instant, stopped, drew up its limbs, and retracted its eyes a little, and in two minutes was to all appearances dead, except for a slight precordial pulsation, which continued for two hours. This frog weighed ninety grains. The relatively smallest fatal dose was one grain of the solution given to a frog weighing three hundred and ten grains. In four minutes it lay entirely relaxed, giving slight reflex movements. In five minutes no sign of life except the precordial pulsation, which continued for over two hours.

The largest dose required to produce death was two grains of the solution, for a frog weighing two-hundred and forty grains. Here, in half a minute there was diminished retraction of the eyes when touched. In fifty seconds its head had sunk down upon the table. At seventy-five seconds the last voluntary movement was noted. In two minutes reflex movement was abolished. The precordial pulsation was perceptible, and thirty per minute, at ten minutes, but soon after that ceased.

This same frog had previously recovered after receiving one grain of the solution. At that time there had been, in 1 minute, great weakness, cessation of all spontaneous movements, and inability to keep or regain the normal position of floating in water. In 3½ minutes, no breathing, no retraction of the eyes when touched, and very slight reflex movements on stroking. In 8 minutes, more marked reflex movements. In 15 minutes, good retraction of the eye and reflex movements on stroking. In 10 hours, quite well. It had also recovered after receiving four grains of a four per cent. solution of cocaine.

The action of smaller doses is shown in the following:

A frog, weighing 195 grains, received hypodermatically one-fifth of a grain of the two per cent. solution.

In 2 minutes it was notably weaker, and when laid on its back could not recover its position.

8 minutes. Lies flat on its belly; makes no movement spontaneously, and but little when smartly pricked. Retraction of the eyes and reflexes from stroking markedly lessened. Cannot keep position in water.

15 minutes. Reflexes better; more movement when pricked.

25 minutes. Its movements are much more vigorous, but not well coördinated. Cannot regain its normal position in water, but keeps it when once placed in it. Does not move spontaneously.

35 minutes. Recovers position promptly in water, but does not when laid on its back on the table.

70 minutes. Recovers position when laid on its back on the table.

10 hours. Apparently quite well.

In two "pithed frogs," one non-fatal and one fatal dose in each, the action was apparently the same as in the normal animal.

In every case, as in those above noted, in which the drug caused death, the heart continued to beat steadily, often for hours, after all other evidence of life had ceased. When, however, the chest was opened and the heart was bathed in the solution, its action immediately became slower, then more feeble, and presently ceased.

In studying the action of this drug, one cannot

but be struck with its similarity to that of cocaine. The sensations produced, the complete though brief anæsthesia, the widening of the palpebral fissure, the dilatation of the pupil greater than that produced by any other mydriatic except cocaine, and especially the general physiological action: in the frog, killing with symptoms of general motor paralysis, not ordinarily affecting the heart much, but slowing and weakening it when directly applied; and the tetanic convulsions in warm-blood animals, such as are caused by cocaine, and have been produced by that drug in man,[1] are all common to the action of both drugs. Even the anæsthesia of the skin I have produced, in nearly or quite equal completeness, with a four per cent solution of cocaine.

This similarity of action raised in my mind the question, whether this new drug possessed any power which would not be possessed by a solution of cocaine to which had been added a portion of one of the stronger mydriatics, as duboisine or hyoscyamine. It seems to me, however, from a careful review of my experience with it, that this drug does possess certain powers, in degree at least, peculiar to it. My impression, from my present experience, is that the solution used, said to be a two per cent. solution, is a more powerful anæsthetic than the four per cent. solution of cocaine. It certainly has a more powerful influence on the frog. The frog killed by two grains of this solution had withstood the action of four grains of the four per cent. cocaine solution. And in a series of some thirteen parallel experiments performed on frogs with these two drugs, cocaine always showed itself the less powerful. Yet this new drug has seemed to exert less influence on the local circulation and the nutrition of the cornea than cocaine.

Then, too, cocaine has but little power of paralyzing the accommodation, while this new anæsthetic-mydriatic has a much greater power in this direction. Still the recovery after the use of the new drug is more rapid than after any other efficient mydriatic, except homatropine, and it has a more powerful influence over accommodation than homatropine. The superiority of the new drug in this direction is especially manifest in its ability to overcome the influence of eserine. Thus the influence of cocaine on the pupil is overcome by one-fiftieth of its weight of eserine, and its influence on accommodation by still less.[2] Homatropine is neutralized by one-eighth its weight of eserine. But this drug requires two thirds or four-fifths of its weight of the myotic to overcome it.

If it is a local anæsthetic more powerful than cocaine, and a mydriatic more powerful yet brief in its action as homatropine, it must be a new drug, and one of great practical importance.

It will be noticed that I have persistently avoided calling this drug by the name which has been given it by Dr Seward, and this has been because I do not believe it is the name by which it should be finally known. Speaking of the origin of the drug, Dr. Claiborne says:

"Mr. Goodman informs me that the tree is known in the locality mentioned as the Tear Blanket Tree. It grows to the height of thirty-five or forty feet, with a diameter to the bole of about eighteen inches, and a spread of foliage of about thirty to thirty-five feet. The leaves resemble those of an acacia. The bark is smooth. From the ground up the tree is furnished with clumps of forked spines or thorns, the parent spine springing at right angles from the bough or trunk. As fruit it bears pods eight or ten inches in length, flat and slightly curved, containing seeds and a viscid juice. The spines are very tough and highly polished, and the wood is extremely tough. It grows in clumps and singly, and is abundant in Louisiana. From the likeness of the tree to the *Acacia stenocarpo*, Dr. Seward dubbed the new alkaloid stenocarpin."

In Professor Charles S. Sargent's "Report on the Forests of North America," vol. ix. of the *Reports of the Tenth Census of the United States*," I find no such tree as the *Acacia stenocarpo* mentioned; and it is not conceivable that a common tree yielding a valuable wood should have entirely escaped notice. Mr. Goodman's description of the tree, however, corresponds closely with that of the *Gleditschia triacanthos*, or common Honey Locust, which grows plentifully in Louisiana, and in many other parts of the United States. Extracts made from the leaves of the honey locust growing near Philadelphia, however, have failed to exhibit any anæsthetic or mydriatic properties. Another member of the same genus, *G. Monosperma*, the Water Locust, which is also common in Louisiana, may possibly be the tree in question.

So while it is pretty certain that the source of this drug is not a tree known to botanists as the *A. stenocarpo*, it remains very uncertain what that source is. On that question, and on the chemical constitution and characteristics of the alkaloid, more light is much to be desired. Enough has been learned of its physiological action to indicate the directions for therapeutical experiment, and we must now look to further clinical experience to fix its proper position and ultimate value.

THE ORIGIN AND HISTORY OF THE EPIDEMIC OF TYPHOID FEVER AT MT. HOLLY, N. J., DURING THE MONTHS OF JUNE, JULY, AND AUGUST, 1887.

BY ALBERT R. LEEDS, PH.D.,
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Mt. Holly is supplied with water from Rancocas Creek. The water is not taken directly from the creek, but from a mill-race, as shown in the accompanying map. When the mill runs, water flows through this race; but when, after the day's work is over, the mill stops, the flow is interrupted also. The crib of the pumping-station is located in an angle or cul-de-sac of this race, so as to stand outside of the current.

From the crib two iron conduits, one of ten inches and the other of twelve inches, and 350 feet in length, with a fall of four inches in this distance, connect with the pump-well. The well is four and a half by eight feet, and four feet in depth. It is not separated

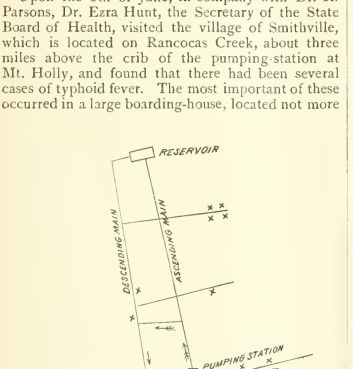
[1] Two cases by S. T. Earle, Maryland Medical Journal, March 19, 1887.

[2] See "Influence of Cocaine on the Pupil and Cornea," before referred to.

from the crib by any arrangement of filters or screens.

Prior to the time of my visit of inspection, but several weeks after the epidemic began, the mud which had accumulated at the bottom of the crib and pump-well was removed, and the crib was built out a distance of ten feet, so as to project its open end into the current. The sides were closed in and the open end covered with a grating having a three-eighths inch mesh.

Upon the 6th of June, in company with Dr. R. Parsons, Dr. Ezra Hunt, the Secretary of the State Board of Health, visited the village of Smithville, which is located on Rancocas Creek, about three miles above the crib of the pumping-station at Mt. Holly, and found that there had been several cases of typhoid fever. The most important of these occurred in a large boarding-house, located not more



than one hundred feet from the side of the creek, and emptying therein by three drains. Early in May there had been two men, who subsequently recovered, ill with typhoid, and at the time of Dr. Hunt's visit, Mrs. A. L. was convalescent of the same disease. The dejecta of all three had passed, without disinfection, directly through the drains into the creek.

In addition to these drains, the cesspools are located on the sloping grounds of the village, and their contents eventually wash down and are carried into the creek. Dr. Brown, the sanitary inspector of the township, reported that these cesspools had been disinfected with copperas and chloride of lime in the latter part of May, and the origin of the epidemic is more directly traceable to the discharges from the drains above alluded to.

From the 20th to the 27th of May there were heavy rains, and the epidemic broke out shortly afterward in Mt. Holly.

As will be seen by the accompanying map, the water was not pumped first through the ascending main into the reservoir, but at the time of the epidemic much of it passed directly into the distributing system.

The most striking collection of cases (indicated on the map by x), were those at contiguous houses supplied from a "dead-end" on Pine street.

At the time of my second visit to Mt. Holly, July 23d, Drs. Parsons, Parry, Barrington, Brown, and Melcher gave me the following list and details of cases up to that time:

On Pine Street, Case L. P. began June 20th; still very ill. W. W. began June 25th; disease still progressing. Cases D. S. and M. G.; the last, however, being properly gastro-enteritis.

On Ridgway Street there was another dead-end connected with a school. Four boys attending this school, though living in different parts of the town, were attacked with typhoid about the 2d of June, of whom one died.

On Mill Street there had been four cases, beginning from the 2d to the 5th of June, of which one proved fatal, on the 20th of June, and the others had recovered or were convalescent.

On Washington Street, M. C., after an illness of two and a half weeks, had died of typhoid. On Main Street, L. H. was attacked June 18th and died July 10th. On Church Street, L. D. was attacked June 6th. The record also includes other cases, beginning from the 1st to the 18th of June.

I am also in receipt of a number of valuable communications from Drs. Parry, Parsons, and Barrington, from which I shall take the liberty to quote.

Dr. Parry writes, July 20th: "I would call your attention to the part of the creek where the water was taken from, a sort of *cul de sac*, where the water never has a running current on the side or near the edge where the box is. It is virtually standing water while the mill is not running below, and hence a place where the sediment from up the stream must settle to. Add to this much mud in the crib and pump-well, a dirty reservoir to pump into, and polluted water, as this was shown to be, and we find it followed by the following cases, occurring about seven to nine days after a rain had commenced. . . . . All of these cases have taken more or less hydrant water, some using it entirely, some at the places of work, and some occasionally. Two-thirds of these cases have occurred, I think, from the 30th of May to the 10th of June. . . . In many cases there has been a very rapid pulse, with comparatively low temperature, some lower even than the above record. But in one case that proved fatal, the axillary temperature attained 106°, and registered above 104° daily for a week preceding her death, with pulse from 130 to 140 during the same time. . . . We have had, occurring at the same time as cases quoted, children afflicted with gastro-intestinal fever, not typhoid, but temperature, pulse, and duration of the disease the same as well-marked typhoid cases, with many cases of mild continued fever, and have had no malarial trouble in surround-

ing malarial districts, and these cases were not controlled by quinine, but all have had much gastric trouble, vomiting, etc. . . . . We have had in the last week or two, in addition to a few cases of typhoid fever, a dysenteric trouble with, in some instances, violent gastric disturbance."

Under the same date, July 20th, Dr. Parsons writes: "I have had under my care three cases of typhoid fever. These cases had the rose-colored spots, bleeding from the bowels and nose, and more or less stupor; temperature 102° to 104°, with a morning and evening variation of about 1°. Two of the cases used water supplied from the creek by the water company, the other used well water only when at home. I have also seen about twelve cases of fever which were remittent, but differing somewhat from the usual form by having some typhoid symptoms, and quinine seems to make no impression on them. This outbreak of fever occurred in various parts of the town almost simultaneously."

On the 23d of July I visited, in company with Dr. R. E. Barrington, the case L. P., and found it presented the well-known characters of typhoid fever. I took some of the greenish stools, and made some of the primary, secondary, and tertiary gelatine-peptone cultures from them. The predominant form was a nearly straight bacillus 0.006 of a millimetre in length, and 0.0002 of a millimetre in breadth, which in the third culture was obtained in a pure condition. The stools contained an innumerable quantity of these bacilli.

Although the data above narrated rendered the fact of this epidemic in Mt. Holly being rightly attributable to typhoid well nigh certain, yet I did not feel satisfied without the confirmatory evidence from autopsy. At my request, Drs. Parsons and Barrington kindly performed an autopsy, and under date of Aug. 8, the former writes: "You will receive by mail a section of the small intestine, and some fecal matter, taken from a patient six and a half years old. I made a post-mortem examination of this case on Saturday, August 6th. While the patient was very young, he had all the symptoms of typhoid, excepting the "spots," and died rather suddenly from intestinal hemorrhage. On examination, I found the ileum ulcerated in about a dozen places. This being the only autopsy during the epidemic, it establishes the fact that some of the cases are *true* typhoid."

Under date of August 15th, Dr. Parsons again writes: "The case from which the specimen was taken that I sent to you, was a child six and a half years old. He had continuous high temperature that varied from 102° to 104°, some slight diarrhœa occasionally, but no other abdominal symptoms, no delirium, very slight stupor, no epistaxis, loss of strength not marked. He improved very rapidly a few days before his death, so much so that the nurse moved him into another room. This brought on hemorrhage of the bowels from which he died in about eighteen hours, after a sickness of three weeks."

"At the autopsy I found in the lower part of the small intestine about twelve or fifteen ulcers, varying in size from a pin head to one inch in length. This ulcer had nearly perforated the intestine. There were several blood-clots and some fecal matter in the bowels."

I was deeply interested to discover what additional evidence of typhoid fever would be obtained by microscopic study of the material submitted by Drs. Parsons and Barrington. My attention was particularly directed to the sides of one of these typhoid ulcers in the small intestine, and after removing small portions of the adherent matter, I made a number of stainings with methyl violet. They all yielded me great numbers of micrococci, the micrococcus being mostly single, but many in short chains. According to Eberth, a certain bacillus with rounded ends is peculiar to typhoid, and Koch is of the same opinion, regarding this bacillus of Eberth as being the only one which has a specific relation to the disease. I find it likewise stated that when these bacilli of Eberth are present in great numbers they have the appearance of masses of micrococci, but when isolated from these masses they are recognized as short thick rods having rounded ends. Unfortunately, having no authentic specimen of Eberth's bacillus with which to compare my slides, I am unable to state whether or no what I took to be micrococci, were really Eberth's bacillus. They possessed one property which is the same as that of Eberth's bacillus, in that they were not so deeply stained by methyl violet as another bacillus present in the superficial layers of the intestine and in the fecal matter. This bacillus was a long, straight, thin rod which stained deeply, and which I took to be the bacillus typhosus of Klebs.

Having established by clinical and pathological evidence the fact that the disease in Mt. Holly was typhoid fever, it becomes of great interest to ascertain the character of the water which, whatever might have been the other surroundings of the typhoid cases, was the one food they took in common.

It would have been of great importance to take the samples of water during the period when the typhoid was incubating, say at the time when Drs. Hunt and Parsons visited Smithville on the 6th of June. But the opportunity of discovering whether the specific bacillus, which was found in the intestine of the typhoid cases, was also present in the water-supply during the period of incubation was lost.

The samples which I collected were taken on the 9th of July, at the time when much typhoid was prevailing in Mt. Holly, but probably subsequent to the inception of the disease in most or all of these typhoid cases.

I have made both chemical and biological analyses of the samples collected, the water on which the latter tests were made being obtained in sterilized flasks. Sample I. was from the Rancocas Creek above the village of Smithville, some 200 yards above the point where the three drains from the large boarding house entered. Sample II. was from the water as it entered the crib of the pumping station at Mt. Holly. Between the two points on both sides of the creek are three miles of meadow and marsh lands, the soakage of which enters the stream. Both

samples were dark yellow (No. 5 on my scale of water colors), of peaty taste and smell, and the sample II. was turbid with a great quantity of floating filaments of decayed vegetation. They contained:

I.—Above Smithville.

	Parts per 100,000.	Grains per Gallon
Free ammonia	0.002	0.0012.
Albuminoid ammonia	0.015	0.0087.
Oxygen required to oxidize organic matters	1.27	0.70.
Chlorine	0 45	0 26.
Hardness	3.10	1 80.
Total solids	6.30	3 67.
Mineral matters	3.30	1 92.
Organic and volatile matters	3.00	1.75.

II.—Pumping Station at Mt. Holly.

	Parts per 100,000.	Grains per Gallon.
Free ammonia	0.006	0 0035.
Albuminoid ammonia	0.0155	0 009.
Oxygen required to oxidize organic matters	1.10	0 64.
Chlorine	0.55	0.32.
Hardness	2 20	1.80.
Total solids	6.20	3.60.
Mineral matters	3.30	1.92.
Organic and volatile matters	2.90	1.68.

Chemical Data.

These data are conclusive as to the pollution of the creek waters by sewage at points below where sample No. I. was taken, which was *above Smithville*. It should be borne in mind that the analyses were both made on the waters after they had been allowed to stand until the suspended matters had settled, and the clear water pipetted off. The sample from above Smithville deposited very little, that from Mt. Holly much floating matter, this matter being evidently of vegetable origin. The clear waters thus obtained were both of the same deep tint of yellow color. Now it is very important to note that the gross amount of organic matters in sample I. was greater than in II. Moreover, the amount of oxygen required to oxidize the organic matters, and therefore the organic matters themselves, was greater in the Smithville than in the Mt. Holly sample. But that portion of the organic matters which was nitrogenous, was greater in the sample from Mt. Holly, the free ammonia and the albuminoid ammonia both being in excess. The free ammonia was three times more in the samples from the pumping-station. This fact, taken in connection with the corresponding increase in the amount of chlorine, is conclusive as to the entrance of sewage into the creek at or below Smithville.

Whenever the amount of peaty matter in solution is great, the amount of oxygen required to effect its oxidation is correspondingly high. This peaty matter is oxidized by contact with light and air both in reservoirs and in flowing streams, so that a stream which at its origin in cedar swamps is dark yellow in color, becomes nearly or quite colorless after flowing a number of miles. I do not think there is any ground for connecting the typhoid epidemic with this large amount of extractive peaty matter in the water supply. It was always present, and I have no reason for supposing there was any more in solution this June and July than at previous seasons. In fact the citizens of a town using cedar-swamp colored water ordinarily become advocates both of its taste and qualities. They are habituated to it, and it does not originate in them disorders of the stomach and bowels. When strangers come to the town, who are not accustomed to drinking water containing peaty matters in solution, and who do experience intestinal derangements attended with more or less diarrhœa, the citizens of the town are puzzled and indignant that these ailments should be connected with what to them is an entirely wholesome and satisfactory quality of water.

But what I desire to insist upon here is, that the typhoid epidemic was not due to the peaty vegetable matter, but to the animal matter in the nature of sewage which found its way into the stream, and whose presence was made evident by the chemical data. Fortunately we are not shut up to the consideration of these chemical data only in the present instance, but I am able to adduce also the results of the biological analyses, affording, as they do, overwhelming evidence of the fact of contamination by decomposable putrescent animal matters.

Biological Data.

I prepared gelatine-peptone cultures of samples I. and II., or rather those portions of these samples which were collected at the same time, but in sterilized flasks.

A. The plate culture of the Smithville sample yielded per cubic centimetre *50 colonies of bacteria.*

B. The plate culture of the sample from the pumping station yielded *8100 colonies of bacteria.*

Another plate culture was made by dipping a sterilized platinum wire in culture A and streaking with it a plate flowed with sterilized gelatine peptone. This streaked plate yielded 15 colonies, all of which proved to be Bacterium lineola, excepting one, which was Bacterium termo.

Another plate was similarly prepared from culture B. It yielded many colonies, which, on examination, proved to consist of Bacterium lineola.

Now it will be noted that I did not find in any of these cultures the bacillus of Eberth, or the bacillus of Klebs, or the micrococci of Chantemesse and Widal, which have been held by competent bacteriologists to be the specific pathogenic microörganisms of typhoid infection. What I did find were two very common species of the bacteria which flourish vigorously wherever putrefaction is going on. They are the so-called *scavenger* bacteria, whose beneficent function in the economy of nature is to prey upon the putrescent matter. They are the sharks of the biological kingdom. They live upon offal and sewage, and by transferring oxygen to such sewage through the medium of their vital processes, they break up and destroy noxious matter and convert it into simpler and innocuous substances.

Of these scavenger bacteria there were 160 times more in the sample at the pumping station than in that from above Smithville, and I know of no other

explanation of this fact than the presence of the sewage in the Mt. Holly sample, upon which they could feed and multiply.

Effect of Precipitation.

In connection with these bacteria I made the following novel experiment, and obtained therefrom a surprising result, and one of much sanitary importance. The practice of adding a minute quantity of alum to water in order to clarify it, is an old and very familiar one. But while it is successful in carrying down the dirt and coloring matters, I did not know what influence it would exert upon the bacteria. I therefore added alum, in the proportion of half a grain to the gallon, to the sample taken at the pumping-station. On standing, the peaty matter was entirely precipitated in reddish-yellow flakes, and the water above became perfectly colorless and clear. On pipetting off some of this supernatant water, I found that instead of containing 8100 colonies of bacteria per cubic centimetre, as it did before precipitation with alum, it contained *only 80 colonies*. They were all the Bacterium lineola.

On filtering some of this supernatant water through a double thickness of sterilized filter paper into a sterilized tube, I found no bacteria in the filtered water. In other words, the water had been rendered by the addition of an amount of alum so minute as to be inappreciable to taste and almost to chemical tests, *as sterile as if it had been subject to prolonged boiling*. I need not enlarge upon this demonstration, which, so far as I am aware, has not been hitherto made, of the possibility of completely removing all microbes from potable waters by the use of very minute amounts of alum followed by filtration. In case there is no organic matter in the nature of peat with which the alumina may unite, and, acting like a mordant in the operation of dyeing, may be precipitated as a lake, the alumina alone may be precipitated by the addition of lime or soda to alkaline reaction, and so carry down the bacteria. Or, in such case, a minute amount of a soluble iron salt like ferric chloride may be first added, and then after precipitation with soda or lime, removed together with the bacteria by filtration.

Recommendations.

The above results, and those obtained by personal inspection of the surroundings of Mount Holly, suggest three modes of obviating the danger of similar epidemics in the future.

I. Finding some point upon Rancocas Creek demonstrably free from sewage contamination. At present I know of none.

II. Finding a water-bearing stratum in the vicinity from which, by means of driven wells, an ample supply of pure soft water, which has been submitted to a natural process of filtration, can be obtained. This may be the most economical method, and some test-wells could readily determine.

III. Previous purification of the water by means of aëration under pressure followed by filtration. In addition to the purification effected by oxidation, a minute amount of alum might be employed, but it is probable that this would not be necessary. By laboratory tests I have already determined that this particular water could thus be rendered pure, colorless, and palatable to all persons. The results of these tests are also in accord with the practical operation of purification and aëration plants already established to treat, on a large scale, water supplies of similar character as that of Mount Holly.

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PRELIMINARY NOTE ON THE MEDICINAL USE OF THYMOL.

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Following the suggestion of Martini, in the *Annali Universali di Medicina e Chirurgia* for February, 1887, I have recently prescribed thymol in a number of cases of intestinal diseases, catarrhs, acute and chronic, and typhoid fever, with the result of convincing me that it is a valuable adjuvant to our treatment of such affections. I do not attach any particular significance to the fact that all the cases of typhoid fever, ten in number, to which I have thus far administered the drug, recovered; but my conviction that the course of the disease was most favorably modified by the treatment was shared by the resident physicians, by practitioners who visited the hospital for the purpose of seeing the cases, and last, and perhaps not least, by experienced nurses.

The benign course pursued by these cases was especially evident when contrasted with that of an equal number treated without thymol during the first half of my hospital term. The favorable effect of the drug was evinced by a steady descent of the temperature, by a gradual diminution in the daily number of stools, by the absence of mental excitement, and, most conspicuously, by the clean, moist tongue presented in every instance.

I have full notes and temperature charts of these cases, prepared by the resident physicians, Drs. H. C. Deaver and N. P. Grimm, but it is unnecessary to give the clinical histories, since they are identical with those of well-marked, but comparatively mild, cases of typhoid. One case caused some anxiety for a few days after his admission, on account of the presence of decided tympany and general abdominal tenderness, but these ominous signs gradually disappeared.

I have also administered thymol, with good results, to several cases of intestinal catarrh, of which one is worthy of some detailed account:

Mary S., æt. thirty-six, married, was admitted to the Episcopal Hospital on May 14, 1887. She was pale, thin, and anæmic. Seven years ago, after removing to Philadelphia from the country, she had an attack of "diarrhœa" (dysentery?), with from fifteen to twenty stools a day, in spite of treatment. Defecation was painful, with marked tenesmus, and the dejecta were thin and streaked with bloody mucus. Gradually the number of passages was reduced to from five to six per diem, and, for nearly seven years, notwithstanding treatment by several physi-

cians, this has been the daily average. Soon after admission she was given thymol gr. x., ter in die, and the next day the number of stools was reduced to three. A week later, she had a well-formed stool every second day, and expressed herself as feeling better than at any time during the past seven years. On July 1, when my term of service expired, she was well, so far as the diarrhœa was concerned, but was still somewhat anæmic.

The medicinal use of thymol is based upon its well-known antiseptic properties, and its action in the cases under consideration was favored by its great insolubility, which enables it to reach the intestine, mingle with its contents, and neutralize the toxic ptomaines that are formed in great quantity in catarrhs of the gastro-intestinal tract. In the opinion of many authorities, it is to the absorption of large quantities of these toxic products of fermentation and putrefaction that the so-called typhoid symptoms are largely due. These opinions do not rest solely upon theory, for it is found that, during the administration of thymol, phenol, which is one of the most constant products of intestinal putrefaction, and is almost entirely eliminated with the urine, is no longer found in that excretion.

I have always prescribed the thymol in pill, of which the best excipient is medicinal soap, and, so far, have not given more than thirty grains in twenty-four hours—two two and a half grain pills every six hours. This is a small dose, but I have seen no reason to increase it. This may be done, however, with perfect safety, and, perhaps, with still better results. It has been administered, with brilliant results, by Bozzolo, in cases of anchylostomiasis, in doses of from ten to twelve grammes (two and a half to three drachms) per diem.

The only case in which I found the drug to produce any unpleasant effect—slight digestive disturbance—was that of a woman with advanced phthisis, chronic diarrhœa, and who was, besides, the host of a tapeworm. Thymol has been found to be an excellent tænifuge by several Italian observers, and it was for this purpose that I prescribed it in the case last mentioned. The woman had voided no fragments of the worm for two weeks, and it was a question whether the parasite had been entirely expelled. Although but a few doses of the thymol were tolerated, they were quickly followed by the expulsion of several fragments of the worm.

Martini, whose experience with thymol has been large, has only found it to give rise to unpleasant symptoms—delirium and stupor—in one case, that of a girl, æt. fourteen, to whom thirty grains had been given in the course of two hours; the symptoms were transient, the treatment was resumed, and the case, one of typhoid fever, recovered without further mishap.

My colleague, Dr. D. J. Milton Miller, has continued the use of thymol in the medical wards of the Episcopal Hospital since he took charge of them on July 1, and, in reply to a recent inquiry of mine, writes as follows:

"Generally speaking, my success with thymol, in typhoid fever, has been most satisfactory. The cases do seem to run a more favorable course than usual, as shown by lower temperature-range, less diarrhœa, the absence of complications, and even a shorter duration of the fever."

In conclusion, it is my belief that the success obtained with thymol in the wards of the Episcopal Hospital renders the publication of this "preliminary note" not only justified, but imperative.

SIMPLIFICATION OF THE TECHNIQUE OF ANTISEPTIC MIDWIFERY IN HOSPITAL PRACTICE.

BY BARTON COOKE HIRST, M.D.
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ANTISEPSIS in obstetrics may seem a subject already hackneyed, about which little more remained to be said, but even if the practice were universally adopted in the lying-in hospitals of this country, the technique, at least of antiseptic midwifery, might still be considered a matter worthy of further discussion.

In the most important contributions to the study of antiseptic midwifery in hospital practice that have recently appeared in this country, there is advocated a rather complicated system of preventive measures against puerperal sepsis, which might, perhaps, not always be easy of application. It is the object of this paper, on the other hand, to describe a more simple, and yet an efficacious plan, that is in use in the Maternity Hospital, and to dwell briefly upon the efforts that have been made to bring the general hygienic condition of the institution to as high a level as possible.

In common with many other hospitals where antisepsis is practised, bichloride of mercury is the disinfectant relied upon; its advantages over the biniodide of mercury, carbolic acid, thymol, and other agents, that have been recommended from time to time, have been so often set forth that it is scarcely worth while more than to mention its solubility, its cheapness, and, more than all, its destructive action, even in weak solution, upon the lowest forms of life when brought in contact with them, being excelled, perhaps, in this last attribute only by the biniodide of mercury. The solution of corrosive sublimate is prepared for use in the hospital by dissolving 128 grains of the salt in a quart of water; this solution is kept in the wards in dark-colored bottles until required for use, when an ounce, added to a pint or quart of water, makes a solution a very little stronger, respectively, than 1 : 2000 or 1 : 4000.

As soon as a woman falls in labor she is cleansed by a full bath, and is then taken to the ward, where she will be delivered, and will remain during the puerperium. As labor advances the patient is placed upon a bed, the mattress of which is completely covered by a gum cloth; upon this rests a clean undersheet, and over this again a rubber sheet, that well overlaps the mattress, and is laced down to the iron framework of the bed; upon this the woman lies, her buttocks resting on a piece of old blanket, some three feet square, that has been washed, soaked in a 1 : 1000 sublimate solution and dried.

As soon as the placenta is expelled, the blanket, soiled by the discharges of labor, is removed, an

earthenware bedpan is placed under the hips, and the patient then receives a vaginal douching of a sublimate solution, 1 : 4000, which is the only vaginal injection given during the whole course of the treatment in an ordinary case. The solution for the douche is held in a glass jar, supported, at a height of about six and a half feet, upon a wooden upright, and from the jar descends a rubber tube, provided near its lower end with a stopcock; to this is attached the vaginal tube, which is of glass, about a foot in length, suitably curved, perforated on all sides along that portion of it which remains within the vagina, when the tube is introduced as far as the cervix, but closed at its distal end, so that it is the vagina alone that is disinfected, an important precaution, we believe, against the possibility of mercurial poisoning from the entrance, retention, and subsequent absorption of the solution within the uterine cavity. These tubes, when not in use, are kept constantly submerged in a jar, filled with sublimate solution, 1 : 2000. Glass tubes, somewhat similar, although open, of course, only at both ends, and kept clean in a like manner, are used for giving rectal injections, which are administered with as much cleanliness as possible to guard against a possible infection from this source.[1]

The hands of all attendants, before coming in contact with the patient's genitals or buttocks, during labor, or in the puerperal state, are scrubbed with a nail-brush, in a sublimate solution, 1 : 1000. All instruments are cleaned in a carbolic acid solution, 1 : 20.

After the single vaginal injection has been given, the perineum, if lacerated, is repaired by a continuous catgut suture, and then the upper of the two gum sheets that have been described is removed, exposing the clean linen sheet underneath; under the woman's buttocks is now slipped a gum cloth, a foot longer than the width of the bed, and three feet wide, upon which rests a piece of blanket, like that which had been removed after labor, and upon this again is placed a piece of canton flannel, disinfected in a sublimate solution, 1 : 1000, and dried, as it presents a more comfortable surface to the patient's skin than would a piece of rough blanket. Canton flannel, blanket, and rubber cloths are removed three times a day, as long as the lochial discharge continues, and, at the same time, the patient's external genitals are wiped clean with a fresh piece of baked cotton dipped in sublimate solution, 1 : 2000. This practice constitutes a system of antiseptic midwifery that must commend itself for its simplicity, while its efficiency is attested by the adoption of a plan somewhat similar, although sometimes even more simple, in the maternity hospitals of Berlin, Munich, Buda-Pesth,[2] and in other equally well-known institutions. It will be seen that this system is based upon the belief that a woman during labor, or afterward, in the puerperium, is infected, if at all, by actual contact with the disease germs that are carried to her, and deposited upon an absorbing surface by the hands of the attendants or by the instruments that may be employed, and that she has little to fear from the atmosphere of a ward which is governed by proper hygienic rules, as long as the lochial discharges are frequently removed from the external genitals, where, exposed to the air, they might putrefy. Although impressed with the importance of non-interference with the parturient or puerperal female, as regards the use of disinfectants, should symptoms arise indicating infection along the parturient tract or the decomposition of retained membranes or fragments of placenta, an energetic course of disinfection is pursued. Intrauterine douches of sublimate solution, as strong, occasionally, as 1 : 1000, are given, and when the presence of decomposing material is suspected, the curette is employed. For the administration of a uterine injection, a Bozeman's canula is used, and to guard against mercurial poisoning, as the sublimate solution is about exhausted a quart or more of water that has boiled for two hours is poured into the glass jar of the fountain syringe, and flowing thence through the uterine cavity, it washes away any residue of the mercurial solution that might be retained and absorbed.

And now a word as to the efforts that have been made to surround each patient with as large a quantity as possible of fresh, uncontaminated air.

There are four wards in use in the hospital, with an average capacity each of 5750 cubic feet (the largest 6411, the smallest 5077), which allows each patient 1916 cubic feet of space, for there are only three patients at one time in a confinement ward, an extravagance of space that is not begrudged so long as it results in an economy of life. After three women have been confined in a ward, the third and last patient, as soon as she is able to leave her bed, is moved to the convalescent ward, when the doors of the confinement ward are closed, the windows thrown open, and the floors and walls well scrubbed, and no patients are admitted again until the other wards have been used in turn. The blankets that have been in use as part of the bed-clothing are taken with the patients to the convalescent ward, but, before being used again in the confinement wards, they are thoroughly washed and disinfected in sublimate solution. The bed sheets of the puerperal women are changed three times a week. The beds themselves are of iron, with a wire mattress upon which rests a corn-husk mattress; this latter is used for ten successive cases, and, although it has been well protected by a rubber sheet, is then destroyed, and replaced by a new one. After a case of septic infection the mattress has always been destroyed at once.

In order to secure sufficient ventilation in winter, —for in summer, with the doors and windows open, this problem presents few difficulties—the heated air that keeps the temperature of the wards as near as may be to 70°, is brought from without the house in large conduits leading to the furnaces, whence it goes directly to the wards above, so that none of the cellar atmosphere is forced up through the rest of the house, although the cellar itself has a water-tight cement floor, and is kept scrupulously clean. There enter each ward, on an average, 5000 cubic feet of

[1] Winckel: Path. u. Therap. des Wochenbettes, pp. 252–255. Hirst: specimen exhibited before the Philadelphia Obstetrical Society, April 7, 1887.

[2] Szabó: Arch. f. Gyn., B. xxx. H. 1.

this heated air every hour, while through the open fireplace—which is not used for heating purposes—there passes up the chimney, every hour, 6000 cubic feet of air, the extra 1000 feet entering the ward through chinks in the windows and doors, so that the atmosphere of the whole room is changed at least once every hour. The fireplace is provided with a sliding shutter to regulate the draught, which is sometimes excessive; while to increase the draught, should that be desired, a gas-jet is let into a small but deep alcove in the wall over the mantel-piece, connecting above directly with the chimney, and shut off from the room by a small glass door. The light from this burner is used as the night-lamp, and during the day, should one of the patients have an offensive evacuation of the bowels, by lighting the gas-jet the ward is freed from odor in a very few minutes.

A simple experiment showed what an effective ventilator this gas-jet can be: on a quiet summer day, with little air stirring outside, and no air forced into the room through the heaters, with the windows and doors closed, there passed up the chimney in an hour, 940 cubic feet of air. Under the same conditions, with the gas lighted, 1476 cubic feet of air passed up the chimney in an hour, an increase of more than fifty per cent.

It is customary in an article of this kind to support the claim for the efficacy of a method of treatment by showing its effect in reducing the mortality and morbidity. In this respect we have every reason to be satisfied, for although the clinic is not a very large one, and we are unable to present an unexampled number of consecutive confinements without a death, yet it must be remembered that the hospital was designed for the reception of a peculiar class of cases, unmarried girls, illegitimately pregnant for the first time, cases that constitute the severest test possible for any system. The patients come to us depressed in mind and body, having endeavored to conceal their condition by tight lacing; having, as a rule, attempted to bring on an abortion; often shunned by or shunning their family and friends, and as ill fit to resist the inroads of puerperal disease, should infection once occur, as any woman could well be. Joined to the liability of all primiparæ to infection, and the inability of this particular class of primiparæ to resist an attack of puerperal fever, there are the other dangers associated with primiparity: the liability to renal troubles and eclampsia; to lacerations of the vagina and perineum; to retarded labors demanding instrumental interference, especially in these patients of the Maternity Hospital, for the most part factory and shop girls, among whom there is a large proportion of contracted pelves.

In spite of all these disadvantages, however, from May 1, 1885, to May 1, 1887, there was only 1 death out of 220 confinements, a death-rate of 0.45 per cent. This death was due to sepsis, but it occurred before the thorough adoption of the system of antisepsis now in use. Since the last fatal case there have been 218 consecutive confinements without a death. In regard to the morbidity during the past two years, accepting 100.5° as the physiological limit to a rise of temperature after confinement, 24.1 per cent. of the patients have had fever, which lasted, on an average, two days. In 9 per cent. of the cases the temperature did not exceed 101.5°.

ELECTRIC CAUTERIZATION AND EVULSION OF MORBID GROWTHS ON THE VOCAL BANDS.

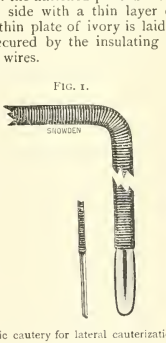
A PRACTICAL NOTE.

BY J. SOLIS COHEN, M.D.,
OF PHILADELPHIA.

THE interest at present evinced in the treatment of intralaryngeal neoplasms prompts me to present illustrations of two instruments successfully used by me in some difficult cases.

I. When a growth, located on the edge or lower surface of a vocal band, is to be attacked by the electric cautery, the platinum blade should be so guarded as to avoid injury to the sound side in the spasm likely to attend the cauterization. To accomplish this object the flattened platinum blade is covered upon one side with a thin layer of asbestos upon which a thin plate of ivory is laid, the whole being firmly secured by the insulating material of the conducting wires.

FIG. 1.



Protected electric cautery for lateral cauterization of the interior of the larynx, and especially of its morbid tissues at the edges of the vocal bands. (Actual size, lateral and front view.)

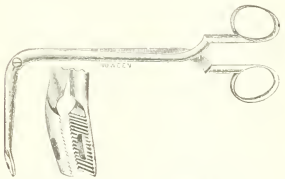
For similar lateral cauterization in the mouth, nose, or other passages, similar insulation of the blade often enables the operator to dispense with special shields for protection of the sound tissues.

It may be remarked here that an essential point in the construction of intranasal and intralaryngeal electric cauteries and the like, is not comprehended by the profession in general. This point is that the conducting copper wires of the electrode should be very thick. This confines the greater resistance to the current in the platinum terminal; and thus the body of the instrument does not become heated as it does when composed of thin wires. Only a certain amount of heat can be generated in a given instance; and this is wanted where it will be efficacious, and that is in the incandescent terminal, and not in the body of the instrument.

Wires too thick to pass a contracted nasal meatus can be flattened laterally, so as to present a smaller transverse section horizontally than vertically, without diminishing the bulk of the conductors. The shape of the conductor is unimportant, its bulk is all important.

II. A minute neoplasm seated upon the upper surface of a vocal band cannot readily be grasped with forceps having the ordinary olive-shaped blade. If the terminal of the blade is squared, however, as in Fig. 2, so many points of contact with the surface

FIG. 2.



Modification of Mackenzie's forceps, especially adapted to the evulsion of small neoplasms from the superior surfaces of the vocal bands. (Main figure two fifths size, jaws actual size.)

of the vocal band are secured that a very small growth can be caught and torn off with the blades of the instrument bent a little forward as shown in the illustration. I have removed growths no larger than hemp seeds, as well as growths much larger, situated upon the anterior portions of the vocal band. This instrument has been particularly valuable to me in the removal of cysts, and in ripping off thickened tissues from the vocal bands of vocalists. The blades of the forceps are applied separated to the surface of the vocal bands, and are maintained in contact with that surface during their closure, so that any prominence in their way becomes seized.

HOSPITAL NOTES.

PHILADELPHIA HOSPITAL.

AN ELBOW PRESENTATION DELIVERED BY SPONTANEOUS EVOLUTION.

(Reported by W. A. N. DORLAND, M.D., Resident Obstetrician.)

OWING to the advantages of operative obstetrics, the practitioner of to-day rarely enjoys the opportunity of witnessing the delivery of a transverse presentation entirely through the exertion of the maternal powers. Recently, however, the writer, being placed under peculiar circumstances, was present at the delivery of an elbow presentation by the process of *spontaneous evolution*. The history of the case was as follows:

C. G., aged twenty-six, II para, a native of Germany, was admitted to the waiting-room of the obstetrical department on June 13th. Fifteen days before admission, while carrying a roll of carpet up a flight of stairs, she fell eleven steps, alighting upon her face and striking her abdomen heavily, the carpet falling upon her. Up to that time the fœtal movements had been frequently noticed by her, but since then they had been entirely absent.

On June 20th, at 3 P. M., labor pains came on, and at 10 P. M. she was sent to the maternity wards. Auscultation revealed no fœtal heart sounds. On palpation a transverse position was determined. Upon making a vaginal examination the pelvis was found to be roomy, the os well dilated, the membranes ruptured, and the left elbow presenting. The ribs of the fœtus could be easily distinguished, as could also the lower angle of the scapula.

The rules of the institution not permitting the resident to perform version, the visiting obstetrician was immediately sent for.

The pains now becoming more frequent and quite severe, the presenting part was jammed tightly down, the arm and hand protruding from the vulva. These were soon followed by the shoulder and then the breech, propelled by violent pains, necessitating the administration of ether; and at 11.15 P. M. a macerated, full-term, male fœtus, weighing six pounds two ounces, was born, ten minutes after the arrival of the visiting obstetrician. The placenta was delivered simultaneously with the fœtus, the cord being twined three times around the neck. The duration of the labor was eight hours and a quarter, of which seven hours were employed in the dilatation of the os. There was no tear of the perineum, and no tendency to post-partum hemorrhage. The mother made a rapid and satisfactory recovery.

Beyond doubt, we think, the macerated condition of the fœtus and the roomy pelvis were important factors in aiding the propulsive efforts of the uterus.

MEDICAL PROGRESS.

SALOL IN THE TREATMENT OF INTESTINAL DISORDERS IN CHILDREN.—DR. GOELET, of New York, has had excellent results with salol and ice-water enemata, in intestinal disorders in children; he writes as follows:

While the adult dose is ten grains, the dose is much larger in proportion with children, and varies very considerably with the age. For a child six months old or under the dose is half a grain every two hours. From seven to ten months old the dose may be from one half to three quarters to one grain, according to the severity of the symptoms and the strength of the child. A child one year old may be given from a grain to a grain and a half, according to the severity of the symptoms. A child fifteen to eighteen months old may take a grain and a half to two grains. At the age of two years the dose would be two grains. For three years of age the dose would still be two grains to two grains and a half. Children of four years would require only two and a half to three grains, and those of five to six years would require only three or three and a half grains. And from this age to ten it is seldom necessary to give more than five grains. It is always given to commence with every two hours, and as the symptoms are relieved the interval is lengthened to three or four hours. As in the first case, I sometimes give it three or four times a day for twenty-four or forty-eight hours after the subsidence of the trouble.

The application of salol in bowel complaints is very

extensive. I have used it in all with the same pronounced success. In typhoid fever, every three hours, there is nothing better. While I cannot say that it shortens the attack, it relieves the excessively disagreeable odor of the feces and the tenesmus and flatulence produced by the accumulation of wind in the colon.

Diarrhœa and dysentery of children in summer are more promptly relieved by salol than anything else. Let me here outline a general course of treatment for these cases. To begin with, stop all food for twenty-four hours. If the little patient is thirsty, use a decoction of salep cold. This is made as follows: A salt-spoonful of powdered salep is rubbed into a paste in a cup with a tablespoonful of *cold* water and a pint of boiling water added slowly, stirring it all the while. This is set on ice, and, when *cold*, it may be given to the child almost *ad libitum*, but in small quantities at a time. Give the salol in appropriate doses every two hours until there is marked improvement in the bowels, and apply something warm to the abdomen. In the majority of cases the little patient will be ready for food in twenty-four hours. This should then be given in small quantities at first, and it must be of the proper kind.—*New York Medical Journal*, August 6, 1887.

Atropine for Sea-sickness.—Rebatel has obtained good results from the hypodermatic injection of atropine in small doses of a solution of $\frac{1}{2}$% of a grain to ʒ 2½ of water, repeated every 7 or 8 hours, until mild physiological effects are produced. The addition of a little morphia will often cause sleep in those who suffer from insomnia.—*L'Abeille Médicale*, July 18, 1887.

Collodion for Gouty Joints.—Monin advises the following:

Collodion. flex. . . .	} ãã 15 parts.
Ether. sulphur. . . .	
Acid. salicylic.	4 parts.
Morph. hydrochlorat. . . .	1 part.

For application externally about painful joints.
—*L'Union Médicale*, July 21, 1887.

Papain and Pepsine.—Finkler, of Bonn, thus compares the two substances on which he has made comparative experiments:

It is impossible to create in the stomach and intestines such amount of liquid as would be favorable to the effect of pepsine; the conditions, therefore, are very much in favor of papain.

Pepsine acts in the stomach but not in the intestines, as in the latter the reaction is neutral or alkaline. Papain has little effect in the stomach, as the reaction there is acid; when, however, the stomach is neutral or alkaline papain will peptonize, while pepsin will be useless. The degree of acid reaction in the stomach varies greatly, especially in the case of a stomach out of order, in which case the reaction can be so highly acid or alkaline that pepsine would be of no value at all. In the treatment of stomach catarrhs we will, moreover, find that as a general rule the contents of the viscus have been rendered artificially neutral or alkaline by the administration of remedies, so that in these cases pepsine will have absolutely no effect. Papain, on the contrary, will act energetically.

In the case o pepsine this is necessarily very short, as the action ceases when the food enters the alkaline reaction of the intestines. In the case of papain, which can act well in alkaline reaction, the time is practically unlimited, as it continues acting on the food during the whole time it remains in the body.

For all these reasons the conditions for the effect in the human body are far more in favor of papain than of pepsine, and especially as under existing circumstances (high degree of concentration) papain has been shown to act much more energetically; it is only too clear that the preference should be given to papain as a digestive ferment for the treatment of dyspepsia. Besides for dyspepsia, the papain is of great importance in the treatment of diphtheria. Its effective power consists in the circumstance that no free acid need be present in the application, and further, that the moisture of the diphtheritic membranes is quite sufficient to allow the ferment to dissolve the solidified substances of the membranes. No other ferment has so far been able to obtain these results. It is on this account that many competent experimentalists and specialists have lately made observations as to these points. From all these circumstances there is no doubt that in papain we have a ferment which has a great future before it, and it is for this reason that I have made a special study of the manner of preparing the papain. I have had the satisfaction of obtaining the most favorable results from its use in the treatment of disease.—*Lancet*, July 23, 1887.

Tetanus Successfully Treated by Cocaine.—Sober treated idiopathic tetanus with a solution of 5 to 100 of a mixture of hydrochlorate of morphia and hydrochlorate of cocaine. Three injections were made, and trismus diminished in two hours and the patient could move. Continuance of the treatment resulted in cure. —*El Genio Medico-quirurgico*, 1887.

The Persistent Virulence of Tuberculous Matter.—Galtier, at recent sessions of the French Academy of Sciences, has drawn attention to the dangers of the transmission of tubercular infection by the clarification of wines with fresh blood, derived from tuberculous animals. He further believes that neither heat, as ordinarily applied; drying; contact with water; the action of salt; freezing; nor putrefaction destroys the infective power of tubercle.—*Gazette Hebdomadaire*, July 8, 1887.

The Gonococcus in the Female Genitalia.—Steinschneider, of Neisser's clinic, in Breslau, has examined 57 prostitutes, finding in every case of gonorrhœa the urethra affected; in 47 per cent. the mucous membrane of the cervix uteri; in 50 per cent. the uterine cavity; occasionally, Bartholini's glands. In all recent cases the urethral secretion contained gonococci, whether scanty or profuse. Long after these germs disappeared from the urethral secretion they could be found in the cervix and uterine cavity, without visible inflammation. The vagina is not a good habitation for gonococci; either because its pavement epithelium is impervious, or its acid secretion destroys the bacteria, or because the great numbers of other bacteria destroy them.—*Annales de Dermatologie et de Syphiligraphie*, July 25, 1887.

THE ABUSE OF MILK DIET IN RHEUMATISM.—DR. BARTHOLOW writes as follows in the *Journal of Reconstructives* of July 12, 1887:

In no malady, as I conceive, is milk more abused than in acute rheumatism. It is very often the chief—sometimes the only aliment employed during the whole course of this disease. Besides the objection inherent in its mere bulk, certain theoretical considerations of its nature should have considerable weight in deciding the question of use. The very obvious objection that milk furnishes lactic acid as a product of its fermentation should not be ignored. All the world knows the intimate relation between lactic acid and the rheumatic poison. By the introduction of lactic acid, a form of endocarditis not distinguishable from the rheumatic, is set up, and of those diabetics treated by lactic acid, a considerable proportion suffer from attacks of rheumatic fever (acute rheumatism). It is difficult, of course, to determine this point with certainty, but I have reason to believe that patients with rheumatic fever do not get well so quickly, and are much more apt to have relapses when they consume much milk during the course of the disease. Surely, sufficient reasons exist for undertaking a thorough investigation of the question. My own practice, in the cases in which I am consulted, is to advise against the use of milk as an ailment in acute rheumatism.

THE PERCENTAGE OF STERILITY AMONG MEN.—KEHRER, of Heidelberg, has examined 96 men, as follows: Impotent, 3; having semen containing dead spermatozoa, 29; deficient spermatozoa, 11; excessive spermatic secretion, 53. The percentage of sterility is thus 33.32.—*Wiener Presse*, July 10, 1887.

NASCENT IODIDE OF SILVER IN CATARRHAL CONJUNCTIVITIS.—GROSELLI has used the following with advantage:

Argenti nitrat.	3.56 parts.
Glycerin.	6.50 parts.
Aquæ	3.50 parts.

Dissolve; filter, and keep in a colored flask.
Also,

Potass. iodid.	3.32 parts.
Glycerin.	6.50 parts.
Aquæ	3.50 parts.

Dissolve; keep in uncolored glass.

For use mix in a glass 2 drops of the first solution and 3 drops of the second. The lids are touched with the yellow precipitate which forms; they should be turned before the application is made.—*Gaz. Med. Italiana.*

A REMOVABLE WATER GLASS JACKET FOR SPINAL DEFORMITIES.—DR. BRUNS, of Jitomir, Russia, is quoted by the *London Medical Record* of July 15, 1887, as describing the following jacket:

A serious drawback of Sayre's jacket is that it cannot be taken off at will. The patient must constantly wear it for weeks, which often gives rise to pressure sores as well as (in pauper practice) to the appearance of numerous lice under the jacket; moreover, during the summer time the patient experiences a great inconvenience from heat, while bathing is impossible; any gymnastical exercise is also out of the question. To meet all demands, Dr. Bruns has invented a water-glass corset which may be easily taken off, while it is as solid as the plaster jacket, is not expensive (the materials required cost about five roubles, that is, about ten shillings), and may be prepared from the materials accessible to every practitioner. To make a corset for a child, aged from eight to ten, he uses 4 pounds of best, and 15 to 20 pounds of ordinary burnt plaster-of-Paris; then 3 or 4 pounds of water-glass, about 230 feet of linen roll-bandage, 6 or 7 small leather straps with buckles, strong threads, etc. Of instruments, only scissors, a knife, and a cobbler's awl are required. To obtain a cast, a thin Sayre's jacket is prepared. The weight of the apparatus, for a child, eight or ten, is about 3½ pounds. Up to the present the author tried his corset in two cases (in that of a boy, aged eight, with thoracic kyphosis, and of a girl, aged twelve, with intense scoliosis). The results (obtained from a six months' use) are said to be excellent.

PRECAUTIONS TO BE OBSERVED IN THE USE OF COCAINE.—DUJARDIN-BEAUMETZ is quoted as advising the recumbent posture during hypodermatic use of cocaine to avoid syncope. In twenty-four hours not more than seven and one-half grains should be given. Doses of one-seventh of a grain, repeated cautiously, are safest. The circulation of patients who are anæmic, or the subjects of cardiac or aortic disorders and liable to syncope, should be carefully watched.—*Journal de Médecine*, July 3, 1887.

ANTAGONISM AMONG BACTERIA.—GARRÈ is quoted by the *Deutsche medicinische Wochenschrift* of July 7, 1887, as reaching the following conclusions from a series of experiments. Inasmuch as pure cultures of bacteria do not grow extensively, but seem to be self limited, possibly by their own excreta, the experimenter mixed bacteria and their products, and found that the nutrient material was often so changed on the addition of a second that the first bacterium could no longer increase.

It was found that the *bacillus fluorescens putridus* of Flügge secreted an easily diffusible substance whose oxidation products colored gelatine green, and prevented the development of the Staphylococcus pyogenes aureus and the bacilli of pneumonia and typhoid fever. The reverse is not always the case in antagonism. Bacteria which grow in the same nutrient materials are called by GARRÈ symbiotisch. Examples of antagonism in the body are afforded by the destruction of cholera bacilli in water and other fluids by saprophytic bacteria. The same may occur in the intestine. The slow progress of periostitis of the jaws is an example of antagonism by the mixture of the staphylococcus with other germs. Garrè concludes that preventive inoculation is not to be made by bacteria of the same, but of unlike kinds, to those against which protection is sought; there is a possibility of successfully combating infectious diseases by prompt inoculation with appropriate bacteria.

NOTHNAGEL'S TREATMENT OF TYPHOID FEVER.—The *London Medical Record* of July 15, 1887, quotes a lecture by NOTHNAGEL, of Vienna, as follows:

In the treatment of acute infective diseases the great point is to search for so-called specific remedies. In quinine we have a drug which renders the malarial

poison innocuous, and we know that mercury and iodine destroy the syphilitic bacilli without destroying the organism. Of all the drugs recommended as specifics for typhoid, not one has stood the test; even calomel, when given from the very commencement of an attack, only seems to shorten the disease, but does not cure it directly. Calomel acts in two ways—first, it is a purgative, and helps to remove the bacilli from the intestinal canal, but castor-oil is quite as beneficial in this sense; secondly, calomel is a most powerful parasiticide, but it has not yet been proved to be a specific for the poison of typhoid fever. The only treatment, therefore, remaining is to treat symptoms as they arise. There are three indications met with in every case: 1, food must be given; 2, the fever reduced; 3, the abnormal secretions kept within bounds. The author considers it necessary to feed his patients energetically, but the food must be given in the fluid form. To begin with, a typhoid patient requires a great deal of water, and he should be given something to drink about every quarter of an hour, either milk, or water, or wine and water; aërated waters should, however, be avoided, especially when gurgling is present. Then, as regards nourishment, milk is the chief article to rely upon, but broth mixed with white of egg is a very useful addition. From a quart to a quart and a half of milk a day, together with the whites of three or four eggs, mixed with broth or soup, will enable a patient to get through an attack of typhoid fever, together with a little stimulant each day. It is most important to insist, on those nursing the patient, that a chart should be kept stating the times food is given, also the quantity taken each time, so that at the end of every twenty-four hours, the exact amount of nourishment taken can be calculated. When the fever has subsided two or three days, the patient may have a little calves' brains or sweetbread, with a little cocoa or chocolate; after a week without fever, a little scraped raw meat, about a teaspoonful at a time. The author holds that in every case of typhoid wine is necesary, at first sparingly, but if there be signs of cardiac weakness, then alcohol should be given freely. A bad case of typhoid can take a very large quantity of alcohol daily without any effect being produced upon the mental condition. As far as the second point indicated, viz., combating the fever, it does not shorten an attack to give antipyretic remedies; even though the temperature be kept near normal, the disease runs its course just the same; the judicious use of the bath, either hot or cold, does, however, benefit many cases; in the early stages the cold bath acts best, but after the second week it is better to employ lukewarm baths at a temperature of 86° to 90° F.

Treatment of Whooping-cough by Insufflation—Moizard has used the following:

Benzoin. pulv.,	
Bismuth salicylat. . . .	āā 5 parts.
Quiniæ sulphat.	1 part.

Insufflation through a simple tube (rubber) from three to five times daily.—*Revue Générale de Thérapeutique*, July 14, 1887.

Tracheotomy after Intubation.—Dr. Irwin H. Hance, of New York, has collected (*Medical Record*, June 25, 1887) nine instances of intubation in which tracheotomy became necessary. Recovery followed in five instances, death in three, and the result in the ninth was not reported. This record suggests an important query: Would the recoveries have been fewer had the tracheotomy been performed in the first instance? The showing would be an unusually good one for uncomplicated tracheotomy without the delays of intubation and subsequent accidents, such as slipping of the tube. On the other hand, did the previous intubations render the tracheotomies less dangerous? Who knows?

Vesical Papilloma; Suprapubic Incision; Recovery.—Wiesinger reported the following case to the Medical Society of Hamburg:

Patient, aged sixty-one, had symptoms of vesical papilloma, hæmaturia, pain, pus and débris in the urine. He was treated by suprapubic incision; removal of the mass, which filled the bladder, by the fingers, curette, and Paquelin cautery; tamponing with iodoform gauze to prevent hemorrhage; non-closure of the wound. Tampons remained in the bladder eight days. On the tenth day after operation digital examination revealed a spot of roughness which was removed by a sharp spoon; tampons again inserted for one day. Wound entirely healed six weeks after operation. Patient in good health five months afterward.—*Deutsche medicinische Wochenschrift*, July 7, 1887.

Méthylal.—In *Le Progrès Médical* of July 2, 1887, Mairet and Combemale report forty-one cases of mental disease in which this drug was used as a hypnotic. They conclude as follows:

The drug has little effect in acute alcoholic mania, and in the first stages of ordinary acute mania; in the later stages of mania and in the various dementias it is a useful hypnotic in doses of from 75 minims to 2 drachms; in some forms of dementia the dose may be reduced to 75 minims. For the first five or six days a good effect is produced, which does not continue, and an interval of two or three days must then elapse before the nervous system is again susceptible to its influence. Méthylal they found to be a pure hypnotic, agreeable to take and without ill after-effects.

The Treatment of Sunstroke, in Children, with Antipyrin.—Demme, of the Children's Hospital in Bern, reports the case of a boy three years old, in whom heat prostration caused severe cerebral hyperæmia with eclamptic convulsions, whose temperature was 40° C. After 3 doses of 4½ grains of antipyrin in hourly intervals the temperature fell to 36.7° C., and the convulsions ceased. For three days the temperature varied between 36.4° and 37.8° C. On the morning of the fourth day the temperature rose to 39.3° and an exanthem resembling measles appeared on the trunk, extremities, and lower portion of the face. The exanthem disappeared in three days. After two days another rise of temperature to 39.7°, with convulsions and symptoms of cerebral hyperæmia, occurred; antipyrin, in the doses given before, produced promptly a fall of temperature to 37.3°. On the fourth day afterward another rise of temperature to 38.3° C. and a recurrence of the eruption occurred, although to less extent. The case is interesting from the presence of

the ... with ... of fever.—*Wiener ... Presse*, July 17, 1887.

APPLICATIONS FOR ACNE.—HEBRA'S the following:

Sulphur. præcipitat.	
Potass. bicarbonat.	
Glycerin.	āā ʒss.
Aquæ lauro-cerasi	
Spts. vini	

A favorite lotion at the Hospital of St. Louis, in Paris, is

Sulphur. præcipitat.	½ to 1 part.
Alcohol. camphorat.	1 "
Aquæ rosa	100 parts.
Aquæ destillat.	150 "

Shake before using.

To be applied every evening with a brush; an ointment of zinc oxide may be used during the day.—*Revue Générale de Thérapeutique*, July 14, 1887.

ANÆSTHESIA BY CHLOROFORM AND OXYGEN.—DR. KREUTZMANN, of San Francisco, reports his results with this method of anæsthesia in twenty-five cases, as follows:

Especially noticeable in a number of instances was the rapid action of the mixture of chloroform vapor with oxygen. Thus, it was repeatedly observed that after a few respirations the patients were sufficiently anæsthetized to permit of the performance of an extremely painful operation without occasioning the slightest suffering, as, for example, the introduction of a catheter in cases of violent urethritis and cystitis, brisement forcé, unaccompanied by any irritation. All reflex remained, nor were the patients completely narcotized, but they had no perception of pain whatever. When the administration of the anæsthetic was discontinued, they recovered consciousness almost immediately, were perfectly rational, felt entirely well and remained so. The patients were only in exceptional instances affected by very slight headache and nausea.

In other cases a complete anæsthesia was obtained, with cessation of all reflex action, for the purpose of making larger operations. Here, as well as with the others, the general feeling of ease and freedom from vomiting and retching and absence of headache was a striking circumstance.

Children and younger persons were placed under its influence quickly and easily, whereas chronic drunkards required a longer time, and slight excitation, such as raising the head and attempts to remove the inhaler, were noticed. They were, however, nothing to compare with the frantic struggle made when ether or chloroform is used, nor did any disagreeable symptoms follow.

The anæsthetic used in conjunction with the oxygen was Billroth's mixture, and the amount required to produce its complete effect was astonishingly small.

The discoverer of this method, Dr. Neudorfer, of Vienna, claims, on theoretical grounds, that its employment is entirely without danger.—*Pacific Medical and Surgical Journal*, August, 1887.

AN IMPROVED CAUSTIC PASTE.—DR. JULES FELIX, of Brussels, having found existing caustics unsatisfactory from the great pain which is caused by their application, from the difficulty of limiting their action precisely to the part desired, from their deliquescence and from various other causes, has devised a form of caustic paste which he has been using for some time past with the best results. It does not cause severe pain or set up any general reaction; the eschar is hard and well defined, so as to be easily detached. It is also a powerful antiseptic and hæmostatic. It is not deliquescent, but keeps its consistence, which is that of putty, well, and so lends itself easily to manipulation. The hands should be well wetted when applying it. They are not in any danger of being acted on. The paste is allowed to remain for from six to twenty-four hours according to the amount of eschar which it is desired to form. The formula for the paste is as follows: Mix in a mortar the following substances in powder: Starch, 37 parts; wheat flour, 112 parts; bichloride of mercury, 1 part; dry chloride of zinc, 110 parts; iodol pure, 10 parts; croton chloral, 10 parts; bromide of camphor, 10 parts; crystallized carbolic acid, 10 parts. Then add gradually a sufficient quantity of distilled water to form a homogeneous paste without lumps of the consistence of putty. This paste will keep an indefinite length of time.—*Lancet*, August 6, 1887.

SOLUTIONS FOR VESICAL DOUCHES.—ULTZMANN, of Vienna, has used the following with good results:

For an irritable bladder lukewarm water with a little tincture of opium; solution of cocaine ¼ per cent; resorcin ½ per cent.; carbolic acid ⅙ per cent. When urine decomposes in the bladder solutions of potassium permanganate ⅒ per cent., or 3 drops of amyl nitrite to a pint of water are injected. For phosphaturia ⅓ per cent. salicylic acid is used.—*Centralblatt für Chirurgie*, July 23, 1887.

THE PREVENTION AND TREATMENT OF FLY BITES.—MYLIUS, of Leipzig, has found that flies have a most acute sense of smell, and that the irritation of their bites is caused by an acid lodged in the wound by the sting. After a long series of experiments with ointments and perfumes, he failed to find a satisfactory agent for preventing fly bites, which could be conveniently used with children. As a means of treatment Mylius has prepared pencils of ammonium carbonate, camphor, and menthol which can be instantly applied after a bite. Occasional cases were observed in which the sting had entered the lymphatics producing more severe infection. Such cases may be treated by cold compresses saturated with equal parts of dilute carbolic acid solution and lead water, to which is added 10 per cent. spirits of camphor.—*Deutsche medicinische Wochenschrift*, July 21, 1887.

ANTIPYRINE BY SUBCUTANEOUS INJECTION, IN COMPARISON WITH MORPHINE.—GERMAIN SÉE has employed this drug by injection in doses of a Pravaz's syringe, which contained a solution of eight grains dissolved in an equal weight of water. It first effect was local pain, and a sense of tension, which was followed by its analgæsic effect. It possesses the advantages of morphine, especially in gouty pains and in neuralgia, without its inconvenient after-effects.—*Gazette Hebdomadaire*, July 15, 1887.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, SEPTEMBER 3, 1887.

THE INTERNATIONAL MEDICAL CONGRESS.

THE great event in the medical world for the coming week is the meeting of the Ninth International Congress in Washington. The first of these congresses was held in Paris, in 1867; the second in Florence, in 1869; the third in Vienna, in 1873; the fourth in Brussels, in 1875; the fifth in Geneva, in 1877; the sixth in Amsterdam, in 1879; the seventh in London, in 1881: and the eighth in Copenhagen, in 1884. The original intention was that they should be held every second year, but it was thought best to defer the Vienna meeting until the year of the great international exposition; and, at the London meeting, it was decided that once in three years would be as often as it is desirable to have such congresses in the future.

The great object in these meetings is increase of knowledge, individually and collectively, by bringing together from all parts of the world men engaged in all departments of medical science and practice, that each may teach that which he knows better than anyone else; and may learn something, if it be only the breadth and depth of his own ignorance. This is effected, not merely by formal papers, but by the discussions in the Sections, and still more by personal intercourse.

The papers and addresses will be printed, the discussions will be reported, and one may consider these at his leisure; but the informal conversations with, and the glance of the eye and the facial expression of, the men whom we recognize as leaders in investigation, in thought, and in practice, cannot be reproduced.

Such meetings exercise a powerful stimulus upon all who know how to accept their benefits. There are a few men always in the world who not only do good work themselves, but who arouse in all who meet with them a desire also to do good work. No one can meet and listen to such men as held the most prominent positions in the London and Copenhagen Congresses, the recognized leaders in European medicine, without feeling that he is in the presence of those who are working to advance medical knowledge with little thought of pecuniary reward, of personal ambition, or of desire for applause; and this feeling will make him an humbler and a better man, and, so far, a wiser one. It is not the business of such Congresses to legislate, or to express opinions on local matters. As Professor Panum, the President of the Copenhagen Congress, said in his opening address, "Nationality does not count in science, it should have nothing to do with our Congress. We are not here to discuss national or political problems, on the contrary, all discussion upon such subjects ought certainly to be forbidden here."

At all events, the less conspicuous medical politics and medical politicians are in these international gatherings the better it will be for their reputation and permanent influence for good.

We hope that the Washington Congress will steer clear of all pitfalls, make important contributions to medical science, and leave behind it nothing but pleasant memories in the minds of all who attend it. The prospect is that the meeting will be a large one, and that there will be a superabundance of papers to hear and discuss, while the element of social enjoyment will not be deficient. If the weather is favorable, as there is every reason to believe that it will be, those who visit Washington next week may be sure of having a good time, and we offer our best wishes that the Congress may be as complete a success as those who have charge of its organization desire to make it.

THE MEDICAL NEWS will have a large staff of special reporters and correspondents in attendance at the Congress, and complete arrangements have been made for promptly placing before our readers a full report of the proceedings.

THE ANTAGONISM BETWEEN BELLADONNA AND OPIUM.

THE importance of arriving at an absolutely correct opinion as regards the antidotal influence of atropia in opium poisoning cannot be over-estimated, since, of all forms of toxæmia due to vegetable poisons this is the most commonly met with, not only by the hospital physician, but also the ordinary practitioner. Perhaps no better example of the value of results obtained by experimentation on the lower animals can be adduced than the benefits derived from our increased knowledge of the physi-

ological action of the two drugs whose names are at the head of this article.

Those of our readers who thirty years ago listened as students to lectures on therapeutics and kindred subjects, will remember that although the symptoms and treatment of poisoning by opium were dwelt upon as important matters, that very little was known as to the direct causes of the signs or the reason for the treatment. Now we know that opium kills by depressing the respiratory centre, and that atropia acts as an antidote by stimulating it, and we also have such additional knowledge as will enable us to treat such cases understandingly, and with real reason.

Notwithstanding the fact that almost all writers believe atropia to be our mainstay in such cases, it is but right that evidence to the contrary should be at least brought to general notice; and in quite an exhaustive paper by LENHARTZ, in the *Deutsches Archiv f. klin. Med.*, 40 B., 5 and 6 Hefte, the whole question now before us is most thoroughly aired from an almost purely clinical standpoint, by means of reports of cases and the aid of a considerable amount of bibliographical labor. The article as a whole, while not denying the usefulness of atropia as an antidote in opium-poisoning, rather decries its constant use, and points out that certain serious symptoms may arise if atropia be used. To be more concise, Lenhartz believes that the unqualified approval of atropia as an antidote in opium-poisoning, so commonly found in the text-books, should be regarded with disfavor, and that the drug should only be used as one of many remedies, and given with a full understanding of the conditions present.

We cannot help feeling that Lenhartz is right in this matter, and the importance of withholding atropine at certain stages of the poisoning can best be recognized by the recollection of the physiological action of the two drugs. It will be remembered that in opium poisoning we have three stages, in the first there may be slight feelings of drowsiness ending with sleep, in the second a constantly deepening sleep with a slow, full, strong pulse, and respirations constantly decreasing in frequency, while in the third stage there exist a rapid, running, feeble pulse and profound depression of respiratory movement. This rapid, feeble pulse in the third stage is simply due to palsy of the peripheral vagi and depression of the heart muscle and its ganglia, coupled with the exhaustion resulting from ventricular distention due to the impaired pulmonic movements. If the reader now calls to mind the fact that atropine is likewise depressant to the heart muscle even in medicinal doses, it at once becomes evident that the use of atropine in this last stage of opium poisoning may, while stimulating respiration, so depress the heart as to bring on serious circulatory symptoms or perhaps death.

While we may rely on atropia in the first and second stage of the poisoning, in the third stage we think it may be laid down as an invariable rule never to use atropia unless accompanied by cardiac stimulants, and that even then the patient should be most carefully watched for signs of circulatory disturbance. It is very evident from the history of most of the cases in which unfavorable results have been reached under the use of atropia that the condition of the circulation was overlooked by the attendant when the drug was administered, and that death resulted from cardiac failure in the manner just stated.

THE MT. HOLLY EPIDEMIC OF TYPHOID.

THE direct causation of typhoid fever by water containing the bacilli peculiar to this disease has again received a positive demonstration in the recent epidemic at Mt. Holly. The attention of the profession has been drawn of late to this subject by the typhoid epidemic at Plymouth, by the cases at Pierrefonds, by the Conanicut Park Hotel cases, and by the recent biological examination, by Dr. Ernst, at the Harvard Laboratory, of the water furnished the steerage passengers on an Atlantic steamer, the use of which was followed by a typhoid epidemic.

It would seem as if no frequent cause of disease had been so thoroughly proven as contaminated water in the production of typhoid fever, and yet the duty which this established relation of cause and effect imposes is frequently neglected by those responsible for the sanitation of a community or a household. While health legislation may be attended by the delays usual in politics, yet thorough scrutiny of the sources of water supplies is as imperative upon the physicians and citizens of a town as are the performance and regulation of vacinnation; and the public will not heed properly this obligation until sanitary administration shall be made equally stringent upon this point.

The most remarkable result of the scientific study of the Mt. Holly cases, by DR. LEEDS, in the present issue of THE NEWS, is the demonstration of the fact that a quantity of alum, so small as not to injure water for drinking purposes, is sufficient, not only to clarify it, but also to reduce greatly its bacterial contents. If further investigation establishes the value of alum as a germicide, we shall be in possession of a readily available agent well calculated for use in these cases.

Dr. Leeds' investigation is of great value and interest, and the further trial of alum in the capacity indicated will be an important and useful experiment.

RAILWAY BRAIN.

At a recent meeting of the Society of Physicians of the Charité Hospital, in Berlin, Thomsen exhibited a patient whose case he described as one of "railway brain," a neurosis resembling in many respects the condition already well known under the name of "railway spine." A healthy railway employé, aged thirty, without history of alcoholism, or of any predisposing neurotic condition, by the sudden motion of his train was thrown violently against the side of a car, striking his head. He sustained no wound, and at the time of injury consciousness was preserved. Some hours afterward, however, he was suddenly seized with syncope, with mental terror, lost all sense of location, could not recognize the simplest familiar object, and described what he saw erroneously; his one objective symptom was absolute anæsthesia of the entire body. On the fourth day after his injury he had violent headaches, a pulse-rate of 44, and, in addition to the cutaneous anæsthesia, loss of olfactory and taste sensations, with difficult hearing. On the fifth day the psychic symptoms suddenly ceased, he could remember nothing which had happened, and had no explanation for his condition.

The patient subsequently became very melancholic, complaining of insomnia, headaches, spinal pain, weariness, and failure of appetite; no sensations of terror or disordered dreams were present. The objective symptoms remaining were well marked cranial and spinal hyperæsthesia; failure to distinguish between white and colors; loss of smell and taste, and impaired hearing; numbness, and at times paresis and spasms, of the region supplied by the facial nerve were also present. He was discharged from the hospital as improved, but two months afterward his condition was unchanged; he was unable to work on account of headache and weakness. Thomsen's diagnosis was "railway brain," a condition of profound disturbance of cerebral functions from shock. The prognosis he stated to be doubtful; the treatment hygienic and palliative.

The increase in mechanical appliances, and the immense extension of railways, afford abundant opportunities for observation of nervous shock, both in its fatal and milder forms. While post-mortem demonstration of hemorrhage and structural lesions explains the course of these cases when fatal, it is evident that we must rely upon the continued observation of surviving patients to determine the development of lesions which will illustrate the pathology of this condition. The possibility of the production of degenerative changes in nervous matter, and cerebral conditions causing permanent mental impairment, is an interesting question for neurologists, and, in its medico-legal aspects, for the corporation whose property may cause such injuries to their patrons and employés.

STENOCARPINE.

The recent discovery of a new anæsthetic substance in the leaves of a tree abundant in Louisiana, and the experiments made with this substance by Dr. Jackson, of Philadelphia, whose paper appears in the present issue of The News, as well as the observations of Drs. Claiborne and Knapp, of New York, are of the greatest interest.

The properties of cocaine have become so well known that it is but natural that the anæsthetic effect of leaves, gathered by chance, and expected to serve only as retainers of heat and moisture, should have aroused curiosity in an intelligent mind. The demonstration of the presence of an alkaloid possessing anæsthetic powers superior to cocaine, and also mydriatic effects exceeding those of homatropine, renders this substance highly valuable in therapeutics.

The Australian alkaloid, drumine, the most recent rival to cocaine, has not realized the expectations of its discoverers, and if American forests can furnish a substance combining and exceeding the actions of two of the most valuable alkaloids now known, it will demonstrate anew the medicinal value of the flora of America, and should stimulate a more complete study of its resources.

The record of yellow fever cases at Key West up to August 28th, according to the reports of the Board of Health, is as follows: new cases, 1; deaths, 60; discharged cured, 171; still sick, 139.

REVIEWS.

Autobiography of Samuel D. Gross, M.D., D.C.L. Oxon., LL.D. Cantab., etc., with Sketches of his Contemporaries. Edited by his Sons. In two volumes, 8vo., pp. xxxii., 407, 438. Philadelphia: George Barrie, 1887.

It is only a few years since the biographical sketches by Drs. Flint, DaCosta, and Hays made the public familiar with the leading events in the life of Dr. Gross. The remembrance in which he is held by the medical profession is as vivid as it is widespread. If it be lacking in the former quality, the present work will do much to fill out the picture and insure its permanence. In the chapter in which Dr. Gross makes an estimate of himself as an author, he refers to the general opinion that he is fond of writing, and proceeds to confess the soft impeachment. Although noted as a man of action in the amphitheatre, many of his happiest hours have been spent in his study, with his much-loved pen for a companion. He evidently found composition an easy task. We like to do what we do well. Fortunately for us he had time in his later years to write the present account of himself and some of his contemporaries.

To make such a story interesting to any but the small circle of intimate friends, it must speak of a man among men who stood in the front of life, and took part in events of importance. While the author's life had no political significance, it had enough in it of the unusual and picturesque to make a pleasing book. One who did so much to give American surgery a name abroad, and who won a deserved eminence at home, must in the evening of his days have memories and reflections well worth attention. He was brought in contact with, and presents reminiscences of men who were first in their callings, including, among statesmen, Jackson, Clay, and Webster; among the clergy, bishops and archbishops, and *savants* of all the sciences upon both continents. Having served in four renowned medical colleges in as many different States, he has much to contribute to the history of these institutions. But his most valid claim as an acceptable autobiographer rests upon the fact that his own life had in it the element of interest due to exceptional incidents and situations. When to this element we add a sense of humor and wholesome good nature in the writer, who has the art of keeping his alert individuality constantly before us, we have a story which is sure to be read with satisfaction, and prove a recreation to the reader. His style is simple and clear, but as the man was positive so his writing is often spirited and pungent. He was a born doctor of the teaching type. His early education was incomplete, though he did much in private study to repair its deficiencies. What he lacked in knowledge of the classics was made up by his acquirements in French and German. These were, for the medical career, of more importance, and there is proof that they were of material help to him all through life. He had an energy which prompted him to be an investigator and a producer of books and essays upon many different subjects. He had a decided talent for public speaking. To a fine presence and great fluency of speech he joined a mellow, well modulated voice, graceful action, and an enthusiastic delivery. These were sure to captivate his audience in the beginning. His popularity as a teacher was due further to the art with which he economized the students' power of attention. Having informed himself thoroughly on his subject, he took a plane of thought just above his auditors, but in the line of easy vision. They were thus enabled to see the truths he would inculcate without changing their natural intellectual posture. It was never an effort to follow him, and without the least straining his students took hold on the principles he presented.

In the larger part of the present book his constant theme is, as it ought to be, himself. Yet he writes of himself with studious moderation, and keeps within the bounds of perfect taste. Under the headings of "Professional Income and Fees," "Teaching," "As a "Practitioner," "As a Writer and Author," "Habits," "Labors," he attempts to estimate impartially not only his character but his achievements. And though he makes a statement which, to say the least, is free from exaggeration, the general effect is inspiring to those who, with a small opinion of their own merits, would yet do something with their lives better than common. As a specimen of a great deal that is wholesome for the reader, we may take this paragraph: "The position which I have attained in my profession has been achieved by hard blows, by no special intellectual endowment, by no special gifts from God, by no special favor from man, but by my own unaided efforts, continued steadily and perseveringly through a long series of years, during which a kind Providence afforded me sound health, lofty ambition, and unflinching fidelity to my profession." Occasional pages of literary power are encountered. Such, for example, is the picture drawn of the hardships of the surgeon. As an offset to sentimental objections to cremation, the cremation society might make use of this passage: "I want to be useful when I am dead, which I cannot be if I am stuck away six feet into the earth. If I am burned, my body will enter again into new creations, and thus be subservient to some useful purpose. It may assist in animating a flower, in ornamenting the plumage of a bird, or in directing the movements of a caterpillar."

Several chapters are given to an account of his European travels. What is personal to himself and the distinguished men who delighted to do him honor, will be read with interest, but we must frankly express the opinion that this narrative of travel is not equal to the best part of his work. One-third of the second volume may be deemed supplementary, as it is devoted to "sketches of some distinguished contemporaries." Most of these were medical men of note, with whom the writer had some connection as colleague. Taken together, these sketches serve not only to portray individuals, but by small touches outline the times in which they figured. Some of them demonstrate that friendly partiality which was always a winning trait of Dr. Gross. He was a very appreciative friend, but even his rivals and opponents are handled humanely in these highly readable pages.

The editors, Dr. S. W. Gross and A. Haller Gross, Esq., deserve a word of commendation. With so many proper names to deal with, the errors are surprisingly few.

They did well to include the memoir by Dr. Flint, which gives information needed to make the history complete, and is itself a testimony so well rounded as to leave little to be desired. The epitaph by Dr. Yandell, which is fitted to it by the editors, makes an admirable finish. The index is copious, and together with the engraved frontispieces, the heavy paper, and perfect type work, gives to this worthy book a satisfactory, indeed, an elegant form.

CORRESPONDENCE.

PROFESSOR VON BERGMANN'S CLINIC.

Among the distinguished surgeons of Germany, Prof. E. von Bergmann, stands in the first rank. His many contributions to the science of surgery, his wonderful skill in the art, and his brilliant results justly entitle him to the position of President of the Congress of German Surgeons, to which he was elected at the last meeting. His daily public clinics, which are well attended, are very interesting and instructive. The richness of the material of his hospital, the *Königliches Klinikum* is such, that only a selected portion of the operations are made before the class. He is even able so to arrange as to have several cases for similar operations at the same clinic, or various morbid conditions of the part to point out the differential diagnosis.

It was with great pleasure and profit that I attended these clinics during the summer semester, which has just come to an end, and it may not be without interest to the readers of your journal to give a short account of the work done.

The wonderful results of thorough and intelligent antiseptic precautions are nowhere better shown than here. When it is seen that major amputations are brought before the class on the twentieth day completely healed, that cases, in which extirpation of the rectum with opening of the peritoneal cavity has been made, go on to recovery without any fever, that in a case of partial excision of the superior maxillary bone with removal of all the walls of one orbit, opening the membranes of the brain, and its prolapse, the patient recovers without an untoward symptom, when, in fact, the prognosis of an operation, where there was no previous sepsis, can be made with almost as great certainty as that of a simple fracture, it cannot be but useful to look into the special methods under which this is accomplished.

The antiseptic precautions are vigorous though simple. Besides a preliminary bath, the surfaces in the wide neighborhood of the scene of operation are shaved, and immediately before operating again thoroughly washed with soap and water and brush, and then with a strong solution of corrosive sublimate ($\frac{1}{10}$th per cent.). All those parts adjoining the field of operation are then wrapped in or covered by towels wrung out in the sublimate solution, and with this same solution the wound is frequently irrigated during the operation; no spray is used. The instruments are kept in a solution of carbolic acid during the operation; they have for the most part smooth metallic handles, which are easily kept aseptic. Sponges are seldom used, little bats of soft, sterilized, crinoline gauze taking their places, though the former are sometimes indispensable in very bloody operations. All those engaged in the operation are dressed in clean, white gowns—and the most careful washing and disinfection of hands is observed before every operation. Comparatively little blood is lost, for two skilled assistants are constantly ready with artery forceps to grasp every bleeding spot, however small it may be. This thorough control of subsequent hemorrhage is certainly one of the factors of success.

The disinfection of a wound after an operation is accomplished by means of the sublimate solution or of *iodoform-ether*. The latter, a simple 10 per cent. solution of iodoform in ether, is a favorite disinfectant after operation on bone, after exsections of tuberculous joints, and whenever a tampon will subsequently be left in the wounds. This solution possesses all the virtues of powdered iodoform, beside the additional advantage that it thoroughly covers the whole surface in all its recesses, and after all excess of the fluid is removed, but a very small quantity of iodoform is left in the wound. Furthermore, the charge of bringing microörganisms into a wound cannot be made against this agent, as it has been against the powdered form of iodoform. Wounds, it matters not how large, if their surface can be brought together, are closed immediately after the operation, sutured and covered with a permanent dressing, drainage tubes being often used, especially in the larger wounds.

The very largest wounds only, such as amputations of the thigh, are reëxamined on the third day. After operations on bone or in joints, an iodoform-gauze tampon is left in the wound for about two days, and at the end of that time removed, and the wound then is closed by sutures, a proceeding which, he shows, does not interfere with union by first intention. In those cases also where there was previously a septic condition, for example, an amputation for gangrene, he does not close the wound immediately, but treats similarly, closing it on the third day, if everything goes well. On the other hand, he strongly disapproves of the practice of tamponing an abscess cavity, which proceeding, he claims, results in the collection of pus in the wound—here he uses drainage tubes and plenty of them. His dressings consist of sterilized crinoline-gauze, containing corrosive sublimate and absorbent cotton. Bandages are also made of the former material. A few layers of iodoform-gauze are also frequently used, being applied directly over a wound. These dressings are always applied dry, and allow rapid evaporation to go on through them, a property upon which Prof. v. Bergmann lays great stress, for, as shown by Esmarck, they allow the deepest layers to remain dry, and dryness is most unfavorable to the activity of microörganisms.

To make a short sketch of the work done during the last three months, the duration of the summer semester, I cannot do better than repeat the *résumé* given by Professor v. Bergmann at the end of the last clinic. Excluding the opening of abscesses and the like, there were 124 greater operations. Of these, there were to major amputations, beside 2 at the hip-joint. There were 18 resections of larger joints, 12 of which were at the knee, 4 at the hip, 1 at the shoulder, and 1 at the elbow. There were 8 osteotomies (made for different conditions, *i. e.*, genu valgum, rachitic curvature of the legs, etc.), 5 necrotomies (in two of these the bones were chiselled out for osteomyelitis spontana acuta), 3 operations for pseudarthroses, 3 incisions or punctures of joints, with irrigation with a solution of carbolic acid, one case of removal of depressed bone in a compound cranial fracture. The number of morbid growths removed was 47, of which 16 were benign. There were 5 carcinomas of the breast, 2 of the rectum; 10 malignant tumors of the face, neck, occiput, axilla, and femur (1 fibroma, 1 adenoma, 3 cysts); 3 of the testicle; 2 congenital cysts; 3 goitres; 3 lipomas of the back of the neck; 1 hydronephrosis; 2 housemaid's knees; 3 simple sebaceous cysts; 1 gouty knot from the plantar surface of the foot; 4 lymph cavernomas, and also the removal of a large number of tuberculous lymphatic glands of the neck in five cases (in which the internal jugular vein was frequently laid bare in almost its whole course, or even partly excised. Beside these there were 2 cheiloplastic operations, 1 rhinoplastic, 1 operation for artificial anus, 5 lithotomies (4 sectio altoe, and 1 sectio mediana); 3 for hemorrhoids (clamping and burning them off); 2 external urethrotomies; 1 myotomy (for torticollis); 5 radical operations for hydrocele; 3 castrations; 2 herniotomies, and 2 tracheotomies. Besides, a great number of patients were demonstrated, who had been operated upon at other times, or who presented interesting surgical affections, but who were not operated upon.

There are a few of the operations above, which deserve special mention. The rhinoplastic operation was made in imitation of the new method of König, accord-

ing to which a rectangular flap, consisting of skin, periosteum and the outer lamina of the frontal bone, having a broad pedicle at the glabella, serves as a bony support of the nose. Its osseous surface is turned out, and is subsequently covered by skin, after the flap has become properly adherent. The hip-joint amputations consisted in a preliminary subtrochanteric circular amputation, made while the leg was constricted by a rubber tube applied as high as possible, and, after all the vessels had been tied and the tube removed, the subsequent excision of the head and remaining portion of the femur through a longitudinal incision over the greater trochanter. As no large vessels are cut in the latter incision, the whole operation can be made with little loss of blood.

The radical operation for hydrocele advised by Prof. v. Bergmann and performed in all the cases above mentioned, requires a long scrotal incision, and the peeling out and removal of the parietal portion of the tunica vaginalis. All bleeding vessels are tied, and the wound sewed, leaving a small drainage tube in the wound for two days, if there is any tendency to subsequent bleeding. It heals by first intention in eight or ten days, or if a drainage tube was used, in a few days more. The advantages which he claims for this operation are that it is the most radical cure, and that it allows all portions of the sac to come into view, so that other morbid conditions, sometimes the real causes of the hydrocele, are not overlooked. HARRY FRIEDENWALD.

BERLIN, August 1, 1887.

REMOVAL OF THE UTERUS THROUGH THE VAGINA.

VAGINAL hysterectomy has passed through phases in its history like those of ovariotomy, and of many other capital operations. Beginning with a crude technique, and a very large percentage rate of deaths, and in the hands of but a few bold operators, it has now at length reached a status which bids fair before long to secure for it a recognition in the list of *safe* operations.

The first great step toward progress has been made in the establishment of the fundamental principle that no case is suitable for this operation in which the cellular tissues in the neighborhood of the uterus have been invaded; this fact being determined by the mobility of the organ, or the detection of infiltration or nodules by careful palpation, rectal, vaginal, vesical, or abdominal. Again, one after another of the serious difficulties in the technique have been met, and correct procedures established, so that it would finally seem that in the hands of some, but little was left to be desired.

While, however, this has been the natural history of the operation throughout Germany, in England and America the results have been the same. Cancerous disease of the uterus is in the latter rarer, and operations more than proportionally fewer, and the mortality of total exturpation great, in inverse proportion. The propriety of performing the operation *at all*, is still open for discussion; and, as a rule, palliative scrapings and applications have the preference.

It is scarcely more than a year since one of the most distinguished ovariotomists of England said to me, upon my informing him that my purpose in visiting Germany was mainly to study vaginal hysterectomy, "that is an operation which I hope you will never do." I will not here open up the question of propriety for any general discussion, hoping that the specific matter which I am about to offer will speak for itself in no uncertain tones.

Given a disgusting foul disease, extremely painful, lingering, and with absolute certainty progressive toward death, what living woman would not accept an operation tending toward a radical cure, with a death rate *less than seven per cent.*, and with a percentage rate of 69.2 per cent. of cases absolutely free from any signs of relapse after one, two, and three years? Such is the record I have the pleasure of offering at the personal request of Prof. Leopold, of the Obstetrical Institute at Dresden. He especially wishes that his work, an account of which has been published in the *Archiv f. Gyn.*, No. xxx. Heft. 3, should be appreciated by American surgeons, hoping that it will in some measure influence their practice.

The results in general have been that, *out of forty-eight cases* upon which he had operated, removing the entire uterus per vaginam, but *three died*, or 6.2 per cent. I make also the following deductions from a carefully arranged table included in the work referred to.

Out of 48 cases, 42 were cancerous, and out of these 42 but 4 involved primarily the body of the uterus, 38 being cancer of the cervix, preponderatingly "mush-room form." Most of which latter we, in America, will readily attribute to lacerations of the cervix, with eversion, infiltration, cystic formations, and, if not constant and consequent, the very frequent *concomitant*, later epithelial activity and cancerous formation. The youngest cancerous patient on the list was thirty-three years old, three being under thirty-five, and two over sixty.

The method by which these remarkable results were obtained is briefly the following: By steady traction upon the cervix uteri, slowly and step by step the appendages are brought down and tied off in small bundles. Torsion of the uterus on its transverse axis is avoided, and the utmost possible care taken to prevent loss of blood, including the assurance of freedom from any danger of secondary hemorrhage. After a thorough preparation of the patient by baths, local douches, attention to the condition of the bowels, and fluid but strong food before the operation, she is put upon the table in the dorsal position, and the vagina carefully washed out with a five per cent. solution of carbolic acid. All carcinomatous material is scraped and washed away under an irrigation of the five per cent. solution.

The uterine cavity is also most carefully cleansed with the same solution applied on cotton. The cervix is then caught and held firmly by Museux or other strong forceps, and a semilunar incision made around its anterior two-thirds, close below but avoiding the limits of the base of the bladder, generally indicated by a fold, and as far as possible from the limit of cancerous tissue. The index finger is then at once forced through the incision, separating the vaginal vault right, left, and in front, as far as possible, keeping the finger close to the cervix. The bleeding, mostly from the cut vagina, is checked by four or five ligatures passed through the vault, close to the margin of the incision. Extreme care may sometimes be called for by the degenerated condition of the tissue between the uterus and bladder, and it may be necessary here to pull down small portions and tie them off, with the utmost respect for the position

of the bladder-wall, as indicated by a catheter. Thus the first step is completed.

The second consists in connecting the angles of this anterior incision by an incision posteriorly, in which the bleeding is also controlled by ligatures embracing the vaginal mucous membrane, at the outer margin of the wound. These ligatures through the vaginal vault *are all left long*. With the index finger the tissue posteriorly is also pushed up, and the cervix freed; then by catching up the loose cellular tissue just behind the cervix posteriorly, with a pair of forceps, the knife readily opens Douglas's pouch with a cross cut, into which a sponge about the size of a walnut is pressed, fastened to wire, wrung out of a five per cent. solution of carbolic acid. The bleeding, which is very apt to be continuous after this incision, is checked by sutures from the vaginal surface, near the cut, up into the angles of the peritoneum on either side, in a loop, and out again on the vaginal surface and tied. The steps in the operation thus far have succeeded in checking all hemorrhage, by the series of loop ligatures in the vaginal vault near the margin of the incision. The bladder has been pushed up, the cervix freed, and Douglas's pouch opened.

It now remains to tie off the broad ligaments on each side, and to free the bladder at its peritoneal reflection, and the hysterectomy will be completed. To separate the left broad ligament, the cervix is drawn strongly to the right with forceps, the index finger slipped in *behind* the left ligament, and the nearest presenting portion hooked down on the crooked end of the finger. On this finger as a guide, the dull needle threaded with stout silk is carried in behind, and the presenting tissue transfixed, the silk secured, and the needle withdrawn. The ligature is tied very securely, *left long*, and the tissue between it and the uterus carefully snipped with scissors.

This step is repeated many times, each time reaching a step higher up, until the tube is reached, but not yet tied. In the same manner, *mutatis mutandis*, the right broad ligament is separated from its uterine connection including tube. The vesico-uterine fold is now readily tied, and the *uterus* thus freed and *removed*.

Tubes and ovaries are only removed when they present readily in the field of operation.

Finally, the utmost care, and as much time as necessary, are employed in seeking out all possible sources of hemorrhage, which must with certainty be checked. Scarcely any blood has been lost throughout the whole of this operation, and the ligature of the parts *en masse* has been carefully avoided, and with the after-attention the results have been such that in the whole forty-eight cases but one secondary hemorrhage has arisen.

After removal of the sponge, and further careful cleansing with similarly prepared sponges if necessary, the ligatures are gently drawn down, and iodoform dusted lightly into the now funnel-shaped wound, a small roll of iodoform gauze laid in, and the same laid in the vagina. The ligatures are cut off at a length of four inches, and the whole vagina further filled with the gauze.

The operation lasts from one to two hours, and the appearance of the patient afterward is that of a woman who has gone through a healthy labor. Patients usually pass water unaided, and the bowels are opened on the seventh day. From the eighth to the tenth day the first vaginal examination is made, and the gauze and some of the loose ligatures removed. From the sixteenth to the eighteenth day the patient rises for the first time, and is dismissed only after she has fairly recovered strength.

Such is the simplicity attained in the technique of an operation which at one time ranked first in its death-rate. My effort has been not to give here that elaborate and minute description of which the operation is so well worthy, but to speak sufficiently in detail to demonstrate its extreme practicability, and, above all, to call the attention of American physicians as well as surgeons to the wonderful results thus attainable.

With the physician lies the serious duty of examining, at the earliest possible date, every woman complaining of symptoms in any possible manner connected with cancer, and it will then be the duty of the surgeon to give the patient the full benefit of such work as that which Professor Leopold has brought before us.

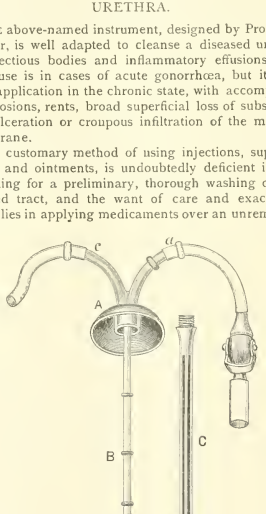
HOWARD A. KELLY.

PRAGUE, July 25, 1887.

ZUELZER'S KATHARAPHOR FOR THE URETHRA.

THE above-named instrument, designed by Professor Zuelzer, is well adapted to cleanse a diseased urethra of infectious bodies and inflammatory effusions. Its chief use is in cases of acute gonorrhœa, but it also finds application in the chronic state, with accompanying erosions, rents, broad superficial loss of substance and ulceration or croupous infiltration of the mucous membrane.

The customary method of using injections, suppositories, and ointments, is undoubtedly deficient in not providing for a preliminary, thorough washing of the affected tract, and the want of care and exactness, which lies in applying medicaments over an unremoved



layer of inflammatory products, needs hardly to be mentioned as incompatible with our ideas of antiseptic treatment.

By the use of the katharaphor this indication is fulfilled, and the ingenious and complete manner of its construction has lead to the belief that it is deserving of notice in America. The accompanying illustrations may serve to explain the instrument:

The bell A is of a size to cover the glans penis. The bent tube *a*, distinguished from its fellow *c* by an elevated ring, is connected with an irrigator of water or antiseptic solution, and terminates in the straight tube B. The latter has a length of $4\frac{1}{2}$–$5\frac{1}{2}$ inches, and ends with a free opening. The outer tube C, encasing B, is screwed into the under surface of the bell and communicates thereby with the outflow-tube *c*. The outer tube is of silver or German silver, its lower end is closed and has a tip like a catheter's. Its sides are perforated by four long, broad slits. The three elevations on B prevent the outer tube C from bending inward.

The current of fluid in *a* B escapes at the open extremity. Through the slits in C it bathes the urethral walls, and the collected washings returning inward again are discharged through *c*. In the treatment of acute gonorrhœa in Zuelzer's clinic, the patient's urethra is irrigated once daily. The liquid is either hot or cold, the latter state being generally preferred on account of the comfortable sensations it produces. The washings are collected in glass vessels until the fluid no longer shows turbidity. By compressing the rubber tube attached to *c* the outflow is arrested. This is done at short intervals and tends to remove particles that would not otherwise come away.

An irrigation lasts from fifteen to forty minutes. It may, of course, when possible, be frequently repeated. Prof. Zuelzer usually combines the use of medicated suppositories, but not with any decided influence on the duration of the purulent discharge. This, as a rule, entirely disappears in from six to eight days, even when pure water is the irrigant.

LOUIS KOLIPINSKI, M.D.

BERLIN, August 6, 1887

NEW INVENTIONS.

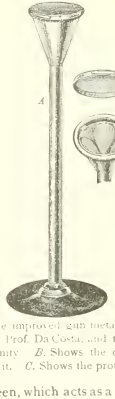
A NEW STETHOSCOPE ON THE AUTOPHONIC PRINCIPLE.

BY R. LEAMAN, M.D.,

DEMONSTRATOR OF CLINICAL MEDICINE IN THE JEFFERSON MEDICAL COLLEGE.

LAST winter Prof. Da Costa, in a lecture introductory to diseases of the chest, suggested that a simple resonating apparatus might be applied to the single stethoscope as others had attempted to apply a microphonic arrangement to the double instrument. This suggestion I laid before Mr. Hentschke, an instrument maker, who has succeeded in making an improvement in both the single and double instrument, which, after due and unbiassed trial, we consider the best instruments in the market. The idea of applying membranes to stethoscopes for the purpose of reinforcing the sound-waves, is, of course, by no means a new one.

Two features, however, are brought out in this "autophonic stethoscope" which are new. The fish skin membrane used can be safely stretched very tight, and is not affected by damp weather; also, the membrane is arranged in such a manner as to form what we might call an autophone. A conical shaped diaphragm is inserted in the conical end of the stethoscope with an



A. Represents the improved gum metal stethoscope, with ear-piece *a*, devised by Prof. Da Costa, and the protecting cap upon the opposite extremity. *B*. Shows the diaphragm with the fish skin stretched over it. *C*. Shows the protecting cap.

interspace between, which acts as a resonating chamber. The result of this arrangement is not only to increase somewhat the loudness of sounds, but it also enables us to define sound better.

In one instance, a heart murmur which was inaudible with the ordinary double stethoscope, was plainly brought out when the resonating chamber was attached. Prof. Da Costa states that with the single autophonic stethoscope he has noticed that the sounds are made clear without the removal of the protecting cap.

Dr. J. C. Wilson informs me that he has "used the autophonic stethoscope with great satisfaction during his past term of service in the wards of the Philadelphia Hospital."

1 38 VINE ST

NEWS ITEMS.

CLINICS AT THE INFIRMARY FOR NERVOUS DISEASES, PHILADELPHIA.—This hospital, which has been well known for many years, has been handsomely rebuilt on the old site, at the corner of Seventeenth and Summer Streets, Philadelphia, and is devoted exclusively to nervous diseases and orthopædics.

The service for outpatients at the hospital has a quite peculiar interest from the mode in which it is managed. In the first place, these clinics are held by the physicians with the assistance of a large staff of assistants. Three rooms on the ground floor, well aired and lighted; a large adjoining room for electrical treatment; a dark closet for ophthalmoscopic purposes; and a photographic chamber, give ample facilities.

The three physicians each hold a weekly clinic, and lectures are now being given twice a week in the lecture room of the hospital.

The method followed at these clinics may be illustrated by a brief mention of the plan adopted by the

senior physician, Dr. S. Weir Mitchell. One of his assistants, Dr. Hinsdale, obtains in one of the case-books the introductory knowledge needed in every instance, and endeavors to form a rough diagnosis; this sketch comes before Dr. Mitchell, who questions the patient and endeavors, as do all the physicians, to follow a printed card which gives the order in which the symptoms shall be noted. This regularity of sequence makes the notes taken more easily comparable. If the notes need to be elaborate, Dr. Morris Lewis examines thoroughly the heart, the lungs, and abdomen; Dr. de Schweinitz the eye and ear; Dr. J. M. Taylor the secretions; while Dr. Massey makes the electrical tests. Each aid has thin slips of paper on which are printed clearly the main points of inquiry, and these, when filled out, come back to the clinical clerk for insertion with the notes of the case. It is rare that all the slips are needed; often a mere negation records absence of heart and lung troubles; but, by this plan, when very accurate notes are needed, they can be had.

Often no opinion is given until a case has been examined at a second visit and a more extended history obtained. It would be difficult to secure more care in diagnosis than is thus attained.

The seven sets of books used in these clinics for records are peculiar to the hospital; they are for epilepsy, chorea, neuralgias, local paralysis and local disease of nerve trunks, paralysis of adults, infantile paralysis, and miscellaneous cases. The plan provides volumes available for examination or inquiry regarding these disorders, and saves the inconvenience of sifting out from a miscellaneous collection the special cases that may be required.

The pages of the chorea book are printed with about fifty questions regarding family history, the previous health of the patient and particularly previous attacks of the disease, the exact date of onset of the present attack, the order in which the members were affected, and very many questions regarding the present condition of the patient. The answers to these questions have secured full statements and have aided the researches on *Chorea and Weather*, by Dr. Mitchell, and on *Chorea and Rheumatism*, by Dr. Morris Lewis, as well as Dr. Mitchell's papers on *Chorea in the Black* and on *Habit Chorea*. At present Prof. Osler is using them to call back to the hospital for reëxamination of the heart all the old cases of chorea, which now number five hundred at least. Dr. de Schweinitz is carefully restudying the eyes of the choreic.

For palsy of infancy case books have been printed with spaces for answers to fifty-eight different items. From a vast collection of cases thus studied Dr. Sinkler was enabled to draw his conclusions as to the relation of the paralyses of childhood to temperature.

The less interesting cases which return frequently, are seen by an assistant, and thus these large clinics are handled with a speed, and yet with an amount of care, which is remarkable.

Medicines are given at a little above cost—at such a rate, in fact, as merely to pay for the drugs and sustain the apothecary.

These clinics are, as a rule, open to all visiting physicians; but we believe Dr. Mitchell, at least, declines to lecture clinically to a mixed class of men and women, and thinks that opportunity for study is lost by teaching at clinics of this kind.

The electrical service under Dr. Massey is very complete, abundant facilities being provided for the use of galvanic, faradic, and franklinic currents in the electrical room and throughout the house. By a novel arrangement the galvanic current is made available for use at the bedside of each patient in the hospital, and all may be treated simultaneously without danger of exhausting the battery. This is accomplished by using the current of the incandescent lighting plant, special wires being laid beneath the floors and connected with plug receptacles, which are placed in the base-boards near each bed in the wards, and beneath the lamps in the private rooms. To these receptacles movable tables provided with a meter and rheostat may be attached at will.

The use of this strong current in medical work is made possible by the special form of rheostat, or current controller, devised by Dr. Massey, which consists of a circular pencil-mark arrangement, permitting any gradation of current from a fraction of a milliampère to fifty milliampères, by the simple movement of a lever. The current used, both for this work and for the electric lighting, is derived from an Edco storage battery of sixty volts and slight internal resistance, fed by a dynamo, both being situated in the basement. The franklinic currents are derived from a four-plate twenty-two-inch Toepler-Holtz machine, with a spark capacity of seven inches.

A very interesting and unusual feature of this hospital is a room on the ground floor devoted to such research as requires instruments of precision. There are, of course, apparatus such as thermometers of all kinds, sphygmographic instruments, and others for counting blood-corpuscles and estimating hæmoglobin; mechanical arrangements for studying and recording tremors and knee-jerks; and devices for the study of clonus, on which Dr. Mitchell is now engaged. In the middle of the room is a large kymographion, with the usual arrangements of tuning forks, etc., for the records of small fractions of seconds.

It is the desire of the managers and of the physicians that the numerous researches which have found their means in these clinics in the past, should in the future receive every encouragement. No hospital in America has, we believe, in the last ten years so notable a record of original work done.

We propose shortly to speak of some of the methods in use here in the treatment of disease.

A MEDICAL COLLEGE AT PORTLAND, OREGON.—A medical college has recently been organized in Portland, Oregon, in connection with the Oregon State University. A faculty of thirteen members have been elected.

THE AMBULANCE TRAINING OF RAILWAY EMPLOYÉS.—In view of the recent railway accident in a western State, where help was inaccessible, the success of this movement in Scotland is of interest. The *British Medical Journal* of August 13, 1887, speaks as follows of this new branch of ambulance training:

"One of the most valuable developments of the ambulance movement in Scotland has been in the train-

ing of railway servants. A most interesting meeting took place in Dunfermline on Sunday evening, when sixty-three railway servants who had received training in ambulance were presented by the Earl of Elgin with the certificates of the St. Andrews Ambulance Association, ninety-three having attended the course of instruction. Various speeches were made by well known local magnates on the great value to their own class and to the public which would accrue through railway servants being properly instructed and accomplished in ambulance work. Drs. W. B. Dow and Oliphant Dow also addressed the meeting, they having conducted the class. The Provost of Dunfermline suggested that ambulance appliances should be placed in all railway stations, and a good deal could be said in favor of this idea."

CONTAGION IN LAUNDRIES.—DR. RUSSELL, medical officer of Glasgow, says that during the last ten years over a million of articles (from persons affected with every kind of contagion known in this country) have passed through the Glasgow laundry, and that he has never known a case of interchanged disease, although the women engaged in the laundry have occasionally suffered from handling the linen before the boiling process.—*Popular Science News*, August, 1887.

THE INTERNATIONAL CONGRESS OF HYGIENE AT VIENNA.—The *British Medical Journal* of August 20, 1887, thus describes the prospects of this approaching Congress:

About 1500 members are expected to take part in the proceedings of this Congress, which, as has been already announced, will be opened next month; 1300 persons have already registered their names. Professor Corfield is announced to read a paper on "The Importation of Rags;" Dr. Frankland, on "Sewage," with special reference to the prevention of river pollution; Mr. F. Hayes Whymper, on "The Law Relating to Factories and Workshops;" and Mr. Murphy, on "International Regulations for Preventing Epidemics." The Austrian Government, it is stated, will take a special interest in the labors of the Congress.

INOCULATIONS FOR HYDROPHOBIA IN THE VIENNA GENERAL HOSPITAL.—A request has been presented by the Austrian Chamber of Deputies to the Managers of the General Hospital, asking that preventive inoculations for rabies be made there.

THE PREVENTION OF HYDROPHOBIA IN DOGS.—The report of the Select Committee of the House of Lords on Rabies in Dogs, just issued, is the complement of the report of the Committee on M. Pasteur's system. The latter dealt with the scientific and medical questions raised by the discovery of M. Pasteur; the former deals with administrative measures for the prevention of disease in dogs. The Lords' Committee has done well to insist upon the facts already well known—that the disease is comparatively rare even in dogs, and that but a small proportion of the persons bitten are liable to contract the disease. This aspect of the question has recently been so fully discussed in these columns that it is unnecessary to recapitulate the facts, but it may be stated that the evidence given by experts impressed the Lords Committee with the protective value of immediate cauterization either with the actual cautery or carbolic acid. The administrative improvements recommended by the committee may be divided into those which would have a permanent effect and those which would only be applied during epidemics. The permanent measures recommended are that, in populous places, local authorities should place restrictions on dogs generally, and especially deal stringently with apparently ownerless dogs in their districts; that the symptoms of rabies should be endorsed on dog licenses; and that the local authorities should have power to order that dogs should wear badges which may identify their owners. Those which would have a mere temporary applicability are: That when rabies is prevalent the muzzle should be enforced; that the power of the police-constable should be extended to authorize the slaughter of stray dogs.—*British Medical Journal*, August 13, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM AUGUST 23 TO AUGUST 29, 1887.

SMITH, JOSEPH R., *Lieutenant-Colonel and Surgeon.*—Ordered to report in person to the Surgeon General of the Army, on September 2, 1887, on business connected with the public service, and on completion thereof to return to his proper station. —*S. O. 198*, par. 9, *A. G. O.*, August 26, 1887.

BARTHOLF, JOHN H., *Major and Surgeon.*—Leave of absence extended one month.—*S. O. 196*, par. 7, *A. G. O.*, August 24, 1887.

PATZKI, JULIUS H., *Captain and Assistant Surgeon.*—Granted leave of absence for one month.—*S. O. 195*, par. 15, *A. G. O.*, August 23, 1887.

MATTHEWS, WASHINGTON, *Captain and Assistant Surgeon.* —Ordered to proceed to Phœnix, Arizona Territory, on public business, and on completion thereof to return to his proper station. —*S. O. 195*, par. 21, *A. G. O.*, August 23, 1887.

TAYLOR, BLAIR D, *Captain and Assistant Surgeon.*—Granted leave of absence for twenty days, to take effect on or about August 31, 1887.—*S. O. 193*, par. 7, *A. G. O.*, August 20, 1887.

SWIFT, E. L., *First Lieutenant and Assistant Surgeon.*—Ordered to report in person to the Commanding General, Division of the Pacific, for duty with troops at Round Valley, Indian Reservation.—*S. O. 195*, par. 20, *A. G. O.*, August 23, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING AUGUST 27, 1887.

BAILHACHE, P. H., *Surgeon.*—Granted leave of absence for thirty days, August 26, 1887.

CARTER, H. R., *Passed Assistant Surgeon.*—Granted leave of absence for twenty seven days, August 25, 1887.

YEMANS, H. W., *Passed Assistant Surgeon.*—Resignation accepted, to take effect September 30, 1887, and leave of absence extended to that date, August 24, 1887.

NORMAN, SEATON—Granted leave of absence for six days, on account of sickness, August 27, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

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FEVER:

ITS CAUSE, MECHANISM AND RATIONAL TREATMENT.

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In the classical monograph on inanition, by Chossat, published in 1843, is the following sentence: Inanition is "a cause of death which marches in front and in silence in every disease in which alimentation is not in a normal condition."[1]

A few years later, Graves, of Dublin, insisting upon the importance of alimentation in the management of continued fever, said that if he had met with more success than others in the treatment of the disease, it was owing, in a great degree, to the counsel of a country physician of great shrewdness, who advised him never to let his patients die of starvation.

Nearly half a century has elapsed since Chossat, comparing the results of a series of elaborate experiments on the lower animals with pathological phenomena in the human subject, recognized inanition as a cause of death in diseases which were then treated by depletory and so-called antiphlogistic measures, and since the "shrewd country physician" advised Dr. Graves never to let his patients die of starvation. Within this half-century, the ideas embodied in the two quotations I have made have taken a permanent place among the accepted principles of the science of medicine. The researches of the physiologist enabled him to recognize the spectre of inanition, marching "in front and in silence" with disease, and the great clinical observer "fed fevers;" the natural history of many diseases, undisturbed by active therapeutical measures, has been studied, and the self-limited character of a large number of these diseases has been established; and now, in the treatment of certain cases, abortive measures having been found ineffectual, the resisting and recuperative powers of patients are sustained.

An important result of the studies of physiologists with reference to animal heat, and of pathologists with reference especially to the essential fevers, is that, important organs being protected against serious complications and accidents, and the nutrition of the body being measurably supported, a fever may run its course, leaving the patient in a physical condition in which speedy and complete convalescence is almost certain. The life of an acute disease usually is short; and a self-limited disease, such as typhoid fever, is a morbid force which calls for resistance on the part of the system for but a certain time. In cases of acute disease, as a rule, there is an inherent tendency to recovery. A disease which involves in its course a rapid and abnormal consumption of matter within the body can rationally be met by the introduction and assimilation, if possible, of nutritive material to save or repair the destruction of tissue. That there is abnormal destruction of tissue in fevers is rendered certain by the progressive loss in body-weight and the marked increase in the elimination of carbonic acid and nitrogenized excrementitious matters; and it is the province of the physician to keep this loss within the lowest limits, and to repair it as speedily and as effectually as possible.

The principal object of this address will be to show how the metamorphosis of matter involved in the normal production of animal heat is accomplished, how the abnormal production of heat in fever, involving, as it does, abnormal activity in the metamorphosis of tissue, may be restricted, and how abnormal destruction of tissue may be limited and repaired.

It is well known to physiologists that the production of animal heat is one of the phenomena attendant upon the general processes of nutrition. It is also well known that the process with which the production of heat is most intimately connected is oxidation of certain matters which are either contained in food or form a part of the tissues of the body. This fact, a knowledge of which dates from the researches of Lavoisier, in the latter part of the last century, has now become firmly established; and the relations between the consumption of oxygen—with the production of certain excrementitious matters—and the generation of heat within the body have, in late years, been the subject of much physiological experimentation. Attempts have been made by Senator and others, to measure directly the quantity of heat produced in the body; with the result of showing that, in mammals, there are produced about four heat-units per hour, per pound weight of the body.[1] According to this estimate, a man weighing one hundred and forty pounds would produce 13,440 heat-units in twenty-four hours.

While the direct method of estimating the heat produced by the body has some elements of uncertainty, it has the advantage, at least, of being similar to the method by which the heat-value of food has been ascertained. On the other hand, the indirect method, employed by some observers, which is said by Dr. Foster to be "as trustworthy as any," seems to me to involve such

[1] Chossat: Recherches expérimentales sur l'inanition. Paris, 1843, p. 194.

[1] The English heat-unit represents the heat required to raise the temperature of one pound of water one degree Fahrenheit. The Continental heat unit represents the heat required to raise the temperature of one litre of water one degree Centigrade. One heat-unit, Continental, equals about four (3.9628) heat-units, English. Four heat-units per pound per hour (English) would equal about one heat-unit (Continental) per pound per hour, or 2.2 heat-units (Continental) per kilogramme per hour. In what is to follow, I shall adopt the English standard for the heat-unit.

possibly enormous errors as to be of little value. This method consists in "simply subtracting the normal daily mechanical expenditure from the normal daily income. Thus, 150,000 kilogramme-metres subtracted from 1,000,000 kilogramme-metres, gives 850,000 kilogramme-metres as the daily expenditure in the form of heat."[1] In this method the only reasonably accurate element in the calculation is the "normal daily income," which is ascertained by estimating the heat-value of food in a normal diet. The calculation of the "normal daily mechanical expenditure," is inaccurate almost to the degree of absurdity. The force expended in the circulation and respiration is estimated, the force in locomotion and in other muscular work is guessed at, and all these estimates of expenditure of energy are calculated in foot-pounds, or kilogramme-metres, which are afterwards reduced to heat-units. Taking, the estimate of the work of the heart alone, if Dr. Haughton's calculation of the quantity of blood discharged by each ventricular systole, which is three ounces, be accepted, a certain result is arrived at; while, if we accept—and on equally good authority—the view that the quantity discharged is between five and six ounces, the figures are nearly doubled, and the error is multiplied by about fourteen times at the heart in twenty-four hours.[2] The calculations also of the force used in respiratory movements, locomotion, etc., are not more reliable; and while it is admitted that one pound weight falling 772 feet will turn a wheel, the friction of which will raise the temperature of one pound of water one degree Fahrenheit, no one has been able to raise one pound weight to the height of 772 feet, or 772 pounds to the height of one foot, by using the heat which will raise the temperature of one pound of water one degree. In the calculations applied to physiological processes, it is always the heat produced which is converted into force; and in fixing the formula for such calculations, it is always the force which is converted into heat. It seems to me, therefore, that the most inaccurate of the direct methods of measuring the heat produced in the body is more useful than any calculations which involve such enormous sources of error as must exist in the estimates of daily mechanical expenditure. However, in the reflections that are to follow, I shall have nothing to do with the conversion of heat into force, but shall confine myself to the questions involved in the normal and abnormal production of heat in the human body.

The late Dr. John C. Draper, following the experiments of Senator and others upon the inferior animals, made a series of observations on his own person, in which he showed that his body, which he found was capable, in twenty-four hours, to three cubic feet, was capable of raising the temperature of three cubic feet of water five degrees Fahrenheit in that time. During the observation, the temperature of the room in which he was reduced one degree.[3] Making the correction—which was not made by Dr. Draper—of one degree lost by the body and imparted to the water,[4] I estimated that the body produces four heat-units per pound weight per hour, which is nearly the result obtained by Senator, and that, consequently, a man weighing 140 pounds would produce 13,440 heat-units in twenty-four hours, in a condition of absolute repose. This quantity would, of course, be increased by muscular exercise.

In a series of experiments made upon my own person, for twenty-four hours, under a liberal diet, I calculated the heat-value of the food ingested as equal to 14,079.15 heat-units. At that time (1878), I weighed 180½ pounds, and, according to my estimate, I produced 17,880 heat-units in twenty-four hours. There was no difference in the body-weight at the beginning and at the end of the observation.[5] This observation showed that nearly one-sixth of the heat estimated as actually produced by the body was not accounted for by the heat-value of the food taken. There can be little question with regard to the accuracy of the accepted methods for estimating the heat-value of articles of food; and it follows logically that there must either be a grave error in the estimate of the heat produced by the body, or that there are certain processes going on within the body not taken into account by physiologists, which involve a considerable production of animal heat. It is to be remembered, also, that I made no allowance for the conversion of a certain proportion of the heat produced in the body into force expended in circulation, respiration, locomotion, etc.

Indirect observations have shown that, out of the daily quantity of hydrogen introduced in organic combinations in the food, a large proportion (about eighty-five per cent.) cannot be accounted for by the organic ingredients of the excretions; and it has also been shown that there is generally an excess of water discharged from the body, over that introduced with the food and drink.[6] In another experiment made on my own person, in 1878, I fasted for thirty-three hours, beginning my observations on the discharge of water, nine hours after the beginning of the fast, in order to allow the digestion of the last meal to be completed. In twenty-four hours, the discharge exceeded the introduction of water by forty-six ounces. I calculated the quantity of water discharged, by deducting from the total loss of body-weight the loss of solid matters in the urine and the estimated loss of carbon by the lungs. The quantity remaining represented the loss of water in excess of the water introduced. The quantity of water introduced was twenty ounces. No feces were passed during this observation.

In another observation, the total discharge of water for a period of five days was estimated by the following method:

"The weight of the ingesta for the five days was added to the body-weight at the beginning of the observation.

[1] Foster, Text-book of Physiology. London, 1878, p. 454. A [illegible] Physiology, and Hygiene, p. 1[illegible]
[illegible] Text-Book of Physiology. Part I. Philadelphia, 1877, p. 72.

[2] Flint, Physiology of Man, N. Y., 1875, p. 70.

[3] Draper, On the Physiological Effects of Sensorial Calm. American Journal of Science and Arts, New Haven, [illegible]. Dr. Draper's experiments were made [illegible] and were [illegible] solved [illegible] and [illegible] and [illegible] differing chiefly from the correspondence of

[4] Flint: Experiments with those obtained by Senator and others, in which corrections were carefully made.

[5] Flint: Experiments and Reflections upon Animal Heat. Transactions of the Medical Sciences, Philadelphia, April, 1879, p. 343.

[6] Flint: Experiments and Reflections upon Animal Heat, loc. cit., p. 355.

[7] Dalton: Human Physiology, Philadelphia, 1882, p. 37.

From this were deducted, the weight of the urine and feces for the five days, the estimated weight of carbon eliminated, and the body-weight at the end of the observation. The result represented the total discharge of water by the lungs and skin, which, added to the water of the urine and feces, gave the total discharge of water. From this was subtracted the water introduced in food and drink. The total excess of water discharged for the five days was 62.78 ounces.[1] The subject of this experiment weighed 119.2 pounds at the beginning of the observation. At the end of the five days, having walked 317½ miles, he weighed 115.75 pounds.

The observations thus briefly described seem to show that, under certain circumstances at least, water is actually formed in the body by the union of oxygen with hydrogen. In the observation made fasting for twenty-four hours, the quantity thus formed was very large. If it can be assumed that water is formed in this way, the heat-value of hydrogen being very great, there is little difficulty in accounting for the heat which has been estimated by direct observation to be produced in the body, as well as for a considerable surplus of heat expended in the form of muscular force. The theory, however, that the oxidation of hydrogen in the body is an important factor in the production of animal heat leads to very interesting and somewhat novel reflections with regard to the physiological relations of water to the general processes of nutrition.

Water regarded as a product of excretion. There are two substances that result from the physiological wear of the tissues, which may be taken as typical products of excretion. One of these, carbonic acid, is a non-nitrogenized principle; and the other, urea, is nitrogenized. Both of these principles are produced in the tissues and are carried by the blood to eliminating organs. The excretion of both is influenced by the activity of molecular changes in the body. It is with these principles that I shall compare the water which is, in all probability, formed in the body and discharged, under certain circumstances at least, in excess of the water of food and drink.

An excrementitious substance is a principle discharged from the body and produced by physiological wear, chiefly in the form of oxidation, of the organism. It is probable that the organism, under normal conditions as regards alimentation, use of parts, etc., produces a quantity of excrementitious matter which is fixed between certain physiological limits. When alimentation is excessive, a certain proportion of nutritive matter is represented in an increased discharge of excretions. This is marked as regards both carbonic acid and urea, particularly in the increased discharge of urea under an alimentation containing an excess of nitrogenized alimentary matters. Starch, sugar, fats, and albuminoids are not discharged from the body in health, but are eliminated in the form of carbonic acid, urea, urates, etc., and water. Muscular work increases immensely the discharge of carbonic acid, in a less degree the discharge of urea, and it notably increases the discharge of water.[2] Muscular work also increases the production of animal heat, but the temperature of the body is regulated within normal limits by evaporation from the general surface. When an excess of food is taken habitually and for a long time, there generally results an abnormal accumulation of fat, it being impossible for the elimination of carbonic acid to keep pace with the introduction and assimilation of food, unless there be a large expenditure of heat and force in muscular work. The excess of nitrogenized food is disposed of largely in the form of urea; but it is probable that a certain part of this excess is converted into fat, and the muscular substance cannot be increased in bulk except by exercise, and then only within certain restricted limits.

As compared with carbonic acid and urea, the water produced in the body seems, to a great extent, to be subject to the same laws. It is a product of oxidation within the organism; its production may be influenced by alimentation, independently of the quantity of water introduced, and by muscular work; it is discharged through organs recognized as organs of elimination, such as the lungs, skin, and kidneys; but its chief point of similarity with the matters generally recognized as excrementitious is in its mode of production.

It has been thought that excrementitious principles, if their elimination be interrupted, are of necessity poisonous when retained in the system. This certainly is not true of water; but the opinion upon this point, with regard to principles commonly regarded as excrementitious, is now open to serious question. It is probable that carbonic acid is not in itself poisonous, and that its retention in the blood produces death by interfering with the absorption of oxygen. There are few conditions under which an animal can be placed, in which carbonic acid can be made to accumulate in great quantity in the blood without interfering with the supply of oxygen; but in the well-known experiments of Regnault and Reiset, dogs and rabbits were exposed for many hours to an atmosphere containing twenty-three per cent. of carbonic acid artificially introduced, with between thirty and forty per cent. of oxygen, without any ill effects.[1] It is now thought by some pathologists that the so-called uræmic convulsions are not due purely and simply to the poisonous effects of the retention of urea in the blood, although this is still an open question.

If it be assumed that water is produced *de novo* in the economy, in its method of production, it closely resembles carbonic acid; but it differs from carbonic acid in having certain uses so important as to lead to its frequent introduction with the food and drink. Its chief use, however, as regards nutrition, is as a solvent; but in this it is aided by carbonic acid, the presence of which, especially in the urine, increases the solvent properties of the liquids of the organism. It is evident, also, that water, as a constituent part of the tissues, tends to preserve their proper consistence.

The water of food and drink has important indirect uses connected with nutrition, both as a solvent of nutritive and excrementitious matters and as a constituent part of the tissues; but the water produced

[1] Flint: Human Physiology, N. Y., 1884, pp. 516, 517.

[2] Pettenkofer and Voit: Journal of Anatomy and Physiology, Cambridge and London, 1868, vol. ii. p. 181. "The elimination of water is very much increased by work, and the increase continues during the ensuing hours of sleep." This was one of the conclusions arrived at from experiments upon a man, twenty-eight years of age, kept for twenty-four hours in a large "respiration apparatus."

[1] Annales de chimie et de physique, Paris, 1849, 3me série, tome xxvi.

within the body by the union of oxygen with hydrogen behaves, in the manner of its production and elimination, like an excrementitious matter.

If this view be accepted, it is evident that the two excrementitious principles, with the production of which the generation of animal heat is most closely connected, are water and carbonic acid. Under ordinary conditions of alimentation, the production of carbonic acid probably has the greater relative importance; but in starvation, while the excretion of carbonic acid is diminished, the production of water, as shown in my starvation-experiment, is probably very largely increased. It is evident that the production of carbonic acid is a much more important factor in the generation of animal heat than is the formation of urea. In the experiment referred to, I calculated the heat-value of the urinary nitrogen as equal to 1677.70 heat-units, and the heat-value of the carbon eliminated as equal to 10,759.09 heat-units. The deficiency, as regards the heat actually produced, must have been represented by the excess of water discharged, which amounted to forty-six ounces, the hydrogen of which has a heat-value equal to 19,751.75 heat-units.[1] Persons exposed to intense cold, as in the Arctic regions, are known to require enormous quantities of food rich in fatty matters;[2] and the production of carbonic acid is probably very greatly increased, although direct observations on this point are wanting.

The foregoing remarks on the physiology of animal heat have been simply preliminary to a discussion of fever; and the influence of the nervous system upon calorification, which is so important in disease, will be considered only in its pathological relations.

The mechanism of fever. The phenomena and mechanism of fever in all its varieties constitute much too large a subject for full discussion within the proper limits of this address. It has been rendered probable by recent bacteriological studies that all of the essential fevers are due primarily to the presence of microorganisms, those producing typhoid fever, especially, having been isolated, cultivated, and accurately described. Fevers symptomatic of local inflammations will form no part of the question now under consideration; and I do not propose to take up the question of pyrexia due to exposure to external heat, as in insolation. The condition which I shall consider, as the type of fever, is the pyrexia in typhoid fever, produced by a definite microorganism and having a duration restricted within certain limits which do not present very wide variations. Typhoid fever is strictly an essential fever, producing, like other fevers, certain parenchymatous degenerations and certain secondary effects upon the nervous system; but it is only the nature, mechanism, and rational treatment of the fever itself which I propose to discuss.

The cause of the pyrexia in typhoid fever is twofold. The more important factor is an exaggeration of the chemical changes taking place in the organism, which generate the animal heat within normal limits. A less important factor is a disturbance of the processes of equalization of the heat of the body mainly by the action of the skin. That an exaggeration of heat-producing processes within the body is an important element in the production of fever, is rendered certain by the excessive consumption of oxygen and discharge of carbonic acid and urea. In health, the discharge of carbonic acid and urea is compensated by the introduction of food, which also has a certain influence upon the quantities of these substances eliminated. In health, there are important influences, also, which depend upon muscular work and activity. In an essential fever, the heat-producing processes seem to be for the time removed from normal regulating influences. Even when no food is taken, the fever continues and the excessive discharge of carbonic acid and urea progresses. The regulating action of the skin is enfeebled or absent. In a fever in which no attempt is made to support the system by alimentation, the phenomena of inanition are added to those of the pyrexia. Simple inanition in a healthy subject is marked by a diminution in the excretion of carbonic acid and urea, with a lowering of the animal temperature, and there is usually but little muscular work. In an essential fever, it seems as if the body were at work, producing an excessive discharge of excretions, without adequate compensation by sufficient alimentation and without a proper regulation of the heat of the body by cutaneous transpiration. Assuming the failure of measures employed to abort the disease, the excessive waste of tissue pursues its course until the morbid processes are arrested by self-limitation, or until the patient dies, either from secondary effects, referable to the persistence of very high temperature, or from simple asthenia. In cases of death from uncomplicated typhoid fever, there usually is very great emaciation.

The waste of the organism usually is most marked as regards the adipose tissue, the destruction of which is probably represented in greatest part by the excessive discharge of carbonic acid. The muscles, also, undergo degeneration, which is at first of the variety called parenchymatous. The destruction of the muscular tissue is probably represented in greatest part by the excessive discharge of urea.

If we can logically view water formed in the body in the light of an excrementitious product, the formation of which in health is closely connected with the process of calorification, the changes noted in most of the cases of typhoid fever, as regards the production and discharge of water, become very important. In nearly all essential fevers there is thirst, but the discharge of water by the skin and kidneys is notably diminished, especially the discharge by the skin, which is dry and hot. In health, the formation of water, with its inevitable generation of heat, seems to carry with it the conditions for equalization of the animal temperature by cutaneous transpiration. In simple inanition, the tissues of the body are economized by the excessive formation of water and the increased prominence of this process in calorification. In health, when there is excessive muscular exertion, there is an increased discharge of water, as was noted by Pettenkofer and Voit. In fever, however, the fats and solid tissues undergo destruction

[1] The temperature under the tongue at the beginning of the twenty-four hours of the observation was 98° Fahr. At the end of the twenty-four hours it was 97.4°.

[2] The late Dr. Hayes stated that on one occasion he saw an Esquimaux consume ten pounds of walrus flesh and blubber at a single meal. (American Journal of the Medical Sciences, Philadelphia, July, 1870.)

and certain degenerations. The formation of water seems to be diminished, and certainly there is a diminished discharge of water from the body attending the increase in the discharge of carbonic acid and urea. Whatever be the essential cause of the pyrexia, the consumption of matter in the production of the excessive heat is chiefly of fat and muscular tissue; presenting a striking contrast to the process of calorification in simple inanition and in violent muscular exertion, which latter condition would actually raise the temperature of the body, were it not for the increased formation of water and the cutaneous transpiration. It would seem that in health, when there occurs any unusual demand for heat to be used in muscular work, the production of water, as well as of carbonic acid, is increased; while, in fever, the pyrexia is fed, so to speak, by the fatty and solid tissues of the body alone. In health, muscular work confined within normal limits induces nutritive activity and improved assimilation of food. In fevers, the activity is mainly degenerative and the assimilative processes are seriously impaired.

These considerations lead naturally to some modification of accepted views with regard to the theories of fever, and render our ideas on these questions more positive and definite than heretofore. I shall express these ideas in the form of propositions, some of which are, to a certain extent, novel:

1. It is probable that the original cause of most, if not of all the essential fevers is a microörganism, different in character in different forms of fever.

This proposition is based upon bacteriological researches of recent date, especially with regard to typhoid fever.

2. Defining fever as an abnormal elevation in the general temperature of the body, the pyrexia is due to the following modifications in the normal heat-producing processes:

A. Oxidation of certain constituents of the tissues, probably by reason of the presence of microörganisms in the blood, is exaggerated independently of increased muscular work and without being compensated by a corresponding increase in the appropriation of nutritive material. This increased waste of tissue is represented by the excess of carbonic acid and urea excreted.

B. The part which the formation of water within the body plays in the production of heat is either suppressed or is greatly diminished in prominence, together with the equalizing action of cutaneous transpiration.

This proposition is based upon clinical facts, which show an increased excretion of carbonic acid and urea and a diminished excretion of water in fevers, and upon experiments which show that muscular work, while it increases heat-production, increases the production of water.

3. Fever produces abnormal consumption of fat, with parenchymatous degenerations, for the following reasons:

A. The fat is consumed because it feeds the pyrexia more readily than do the other tissues of the body, and its consumption is the most important source of carbonic acid.

B. Parenchymatous degenerations of muscular tissue and of the solid organs occur, chiefly because the abnormal transformations of these parts, which result in an excess of urea and which probably, also, contribute to the excess of carbonic acid, are not compensated by the appropriation of nutritive matters from the blood.

C. It is well known that patients with unusual adipose or muscular development are likely to present a more intense pyrexia in fevers than are those whose adipose and muscular development is smaller.

Finally, *An essential fever is an excessive production of heat in the body, induced by a special morbific agent or agents, and due to excessive oxidation, with destruction of the tissues of the body, and either a suppression or a considerable diminution in the production of water.*

Suppression or great diminution of cutaneous transpiration in the essential fevers, while it contributes, in a measure, to the rise in temperature, is not itself a cause of fever.

I do not propose to discuss at length the influence of the nervous system on the normal production of heat or upon fevers. It is well known that the nervous system is capable of modifying the local circulations and of producing local changes in temperature. Some physiologists have endeavored to locate a heat-centre, as well as a vasomotor centre, and some varieties of fever are regarded as due to morbid action of nerve-centres, either direct or reflex. A consideration of these questions, except in so far as the nervous system is secondarily affected in fevers, would extend this address beyond its proper limits. I shall, however, allude to certain conditions of the nervous system in fevers in connection with what I shall have to say on the subject of treatment.

Rational treatment of fever. Symptoms referable to the nervous system are nearly always more or less prominent in essential fevers of a grave character. In the great majority of cases, at least, the disturbances of the nervous system are secondary and are due to the pyrexia, being intense generally in proportion to the intensity of the fever itself. While the special morbific cause of typhoid fever is, of course, the cause of the delirium, coma vigil, hebetude, etc., observed in rave cases, it is rational to suppose that it acts as a secondary cause of these phenomena, by virtue of changes induced directly by the prolonged elevation of body-temperature; and the same may be said of the pulse, which is high usually in proportion to the intensity of the pyrexia. Certain it is, that a mere reduction of the temperature, by means which can not be presumed to affect the special cause of the disease, is nearly always attended with an amelioration of the nervous symptoms and a reduction in the rate of the pulse.

The parenchymatous degenerations and the alterations in the structure of the muscles and of the secreting cells of glands are unquestionably due to modifications in nutrition produced by the action of microorganisms; and it is well known that in typhoid fever and in pneumonic fever these microörganisms are deposited in special parts, as the intestinal glands and the lungs. It is certainly a rational object of treatment to confine these degenerations within the narrowest possible limits.

While it is not possible exactly to limit different measures of treatment to particular phenomena, there are certain therapeutical indications specially called for by morbid processes which relate to different systems

and organs of the body. These measures may be classified as follows:

1. Reduction of the general temperature by the external application of cold.

2. Reduction of temperature by the internal administration of antipyretics.

3. Promotion of general nutrition by alimentation.

4. Measures to supply to the system matters that can be consumed in the excessive production of heat, thereby retarding destruction of tissue.

The application of cold to the surface by means of cold baths, sponging, etc., is now almost universal in the treatment of the essential fevers. While the value of this therapeutical measure is undoubted, and while its employment of late years has unquestionably diminished the fatality and abridged the duration of typhoid fever, writers are not agreed upon an exact explanation of its mode of action.

If the proposition that fever is due to the excessive production of heat be accepted as true, the explanation of the modus operandi of the beneficial effects of refrigeration of the surface in fever seems to me to be very simple and entirely satisfactory.

In health, when the body is subjected to excessive cold, the normal temperature is maintained, not only by retaining the radiation of heat from the surface by appropriate clothing, but by an actual increase in the production of heat. External cold increases the consumption of oxygen and the production of carbonic acid. The increased production of heat is promoted by muscular exercise, and the material necessarily consumed is supplied by what, under ordinary conditions, would be an excessive assimilation of food, particularly of fatty matters, which have a high heat-value. The enormous consumption of fats in excessively cold climates is an evidence of this fact.

In fevers, there is an excessive production of heat, which raises the temperature of the body, partly for the reason that the equalizing action of cutaneous transpiration is impaired. If we remove part of this excessive heat by the application of cold to the surface, the temperature of the body is necessarily reduced, and it only remains for clinical observation to determine whether or not this reduction of temperature be beneficial. Its beneficial effects, however, are unquestionable.

Physiological and pathological conditions are thus brought into striking contrast, and the pathological phenomena are readily explained in accordance with physiological principles.

In the healthy body exposed to excessive cold, we have given the condition of cold. This is met by a physiological increase in the processes of calorification, and by vaso-motion of the surface against loss of heat.

In the organism affected with fever, we have given, as a pathological condition, an increase in the processes of calorification. This is to be met by artificial external vaso-motion of cold, the excess of heat is abstracted from the body.

The clinical thermometer, the general condition, and the subjective sensations of patients are safe guide with regard to the extent to which external cold should be applied in any individual case; and the application of cold to the surface is not only a rational measure of treatment in fever,

The amelioration of the nervous symptoms and the reduction of the pulse-rate, which usually follow reduction of temperature by external refrigeration, are arguments in favor of the view that these symptoms are mainly due to the pyrexia itself and not to the direct action of the special morbific agent which produces the disease.

Analogous effects are produced, although in a different way, by internal antipyretic remedies, of which antipyrin and antifebrin are now extensively used in this country in the treatment of fevers. The mode of action of antipyrin is not well understood, but its efficacy and value in reducing temperature are universally acknowledged. Extended and complete observations on the influence of this drug upon the elimination of excrementitious principles are as yet wanting, but the recent experiments of Umbach, in Berne, show that antipyrin has an important action in diminishing the excretion of nitrogen.[1]

Alimentation in fever. It is in accordance with accepted views concerning the physiological production of animal heat and its exaggeration in pyrexia, to supply food in fever, in such quantity as can be readily digested and assimilated, with a twofold object. The only possible objection to alimentation within the limits of assimilation would be clinical experience showing an increase in pyrexia or in other morbid symptoms; but clinical experience shows, on the contrary, that innutrition adds to the intensity of all the morbid phenomena characteristic of the disease. There is no disease in which the spectre of inanition is more prominently "a cause of death which marches in front and in silence" than in typhoid fever. An unusual physiological demand for heat is met by increased alimentation. The pathological increase in the production of heat in fever is attended eventually by destruction of tissue and results in degenerations.

The more prominent and important object of alimentation in fever is to supply or retard waste of tissue and degenerations. In so far as this end is attained, the ravages of fever are restrained. The disease having pursued its course, in proportion as its effects upon nutrition are restrained, the system is better prepared for rapid and complete convalescence.

A second object in alimentation, less prominent and important merely because more difficult and uncertain in practice, is to supply material for consumption, and thus far save destruction and degeneration of tissue.

The extent to which alimentation, therefore, is to be carried is limited only by the powers of the digestive system. Unfortunately, however, the degenerations and disturbances of function, which occur in fever, are prominent in the digestive organs. It is seldom, if ever, possible for a patient to assimilate food in sufficient quantity to repair the waste of tissue; but it is rational to endeavor to secure as much assimilation as is practicable. The difficulties in the way of efficient alimentation are due to degenerations of the glands of the

[1] Archiv für experimentelle Pathologie und Pharmakologie, Leipzig, 1887, Bd., xxi. Nos. 2 u. 3. According to these observations: "Antipyrin, like quinine and other antipyretics, materially lessens the elimination of nitrogenous matters, and can therefore be said to cause a decrease in the tissue changes of the respiratory and alimentary systems." Therapeutic Gazette, Detroit, September 15, 1886.

stomach, to which are frequently added, degenerations of the secreting cells of the salivary glands and pancreas. The practical skill of the physician is taxed to the utmost, in individual cases, to overcome these difficulties; but the judicious administration of milk, eggs, farinaceous articles, meat-broths, meat-essences, etc., is always productive of good results. A part of the nutritive constituents of these articles goes to repair the waste of tissue, and it is logical to conclude that a part supplies matter consumed in the production of heat. It is also rational to assume that, the repair of tissue being carried to the greatest possible extent, the hydrocarbons and fats must be useful in supplying material for those processes which are represented by the excessive elimination of carbonic acid. In no case of fever is it possible actually to accumulate fat in the system during the progress of the disease; and hydrocarbons and fats introduced must contribute to the formation of heat and thus restrict parenchymatous degenerations.

The disturbances which follow an alimentation carried to a degree beyond the powers of the digestive organs afford a reliable guide as regards the extent to which food should be introduced in fevers; and, in my judgment, too little attention and care have been given to the administration of articles of food which have a high heat-value, such as fatty and farinaceous articles.

As a digression, bearing, however, upon the question of the value of fats in conditions involving excessive production of heat, I may allude to their use in pulmonary phthisis.

I assume it to be settled that phthisis is produced by a special microörganism. One of the most prominent general phenomena of phthisis is a constant elevation in the body-temperature. When the disease is progressive, there is an increase in the heat of the body. When the disease is non-progressive, as indicated by physical signs, arrest of loss, and perhaps increase of weight and absence of bacilli from the sputum, the temperature of the body becomes nearly or quite normal. The pyrexia in phthisis is ordinarily not sufficiently intense to induce, of itself, serious disorders of digestion or much general disturbance; and the difficulties in the way of the assimilation of fats are usually not great. Leaving out of consideration, for the present, the effects of alcohol, there is no measure in the treatment of phthisis of greater recognized therapeutical value than the administration of fats.

The use of alcohol in fever. Alcohol is a substance, the toxic effects of which, taken in excess, are quickly and distinctly manifested; and there are few agents more prompt and decided in their influence in cases of disease. Clinically, the effects of alcohol in diseases in which there is a tendency to death by asthenia are so marked, that it is often used indiscriminately and injudiciously. In the treatment of fever the immense benefit which follows the use of alcohol in certain cases has led, at one time, to its use under all circumstances; and its indiscriminate administration, on the other hand, has produced, from time to time, a reaction of opinion, leading to its suppression in cases in which it would be of great service. Many of the moral arguments against the use of alcohol in disease are entirely illogical, and could, with equal want of propriety, be applied to a number of important articles of the materia medica. Alcohol is a potent agent in the treatment of fever; and the clinical guides which should direct its administration are easily recognizable.

In no case of disease, except, perhaps, in certain instances of poisoning by animal venoms, should alcohol be administered to a point where the slightest degree of alcoholic intoxication is apparent.

Alcoholic intoxication is due to certain peculiar effects of alcohol upon the nerve-centres; and in order to produce these effects the alcohol must circulate in the blood. As these effects pass off, the alcohol is either oxidized or is eliminated by the skin, lungs, and kidneys. Under normal conditions of nutrition, the effects of alcohol are so rapid and transitory, and are followed by such decided reaction, that it contributes little or nothing toward a prolonged resistance to cold. Experience has shown that it cannot take the place of an abundant and a highly fatty alimentation in excessive cold, as in the Arctic regions; and under these conditions its constant use has been found to be positively injurious. The same remark is in a measure applicable to all conditions of healthy nutrition. In a continued fever, however, the conditions are radically changed. In accordance with the views which I have presented, the excessive production of heat in fever is a fixed condition, continuing for a certain period, which is limited by the duration of the disease. The phenomena referable to the pulse, to the nervous system, etc., are secondary to the pyrexia. The parenchymatous degenerations are the more remote changes of tissue which follow and result from transformations involved in the long-continued excessive production of heat. If these views be accepted as correct, any readily oxidizable substance artificially introduced, will, if it be oxidized, mitigate the secondary effects of the fever upon the pulse and nervous system and retard degenerations, provided, always, that it do not increase the intensity of the pyrexia. Experience is not wanting to show that these results follow the judicious administration of alcohol in fever.

Inanition is also a constant element in a fever long continued. In health, the formation of water in considerable quantity, in the production of heat, occurs in the first part of a period of deprivation of food, and this saves, to a certain extent, destruction of the solid tissues. One of the most marked and constant conditions in fever is a disturbance of the heat-producing processes, in which the solid tissues are consumed and the production of water is greatly diminished. It is a rational object of treatment to endeavor to restore the normal equilibrium between the consumption of the so-called solids and the formation of water, as factors in the production of heat. If it were possible to introduce farinaceous and fatty articles of food in sufficient quantity in fever, it might not be necessary or desirable to use alcohol; but the condition of the digestive organs is such that these articles are slowly and imperfectly prepared for absorption. Alcohol, however, requires no preparation by digestion. It is promptly taken up by the blood, and is oxidized even more readily in fever than in health.

It is well known that saccharine and starchy articles of food, as well as the liver-sugar, rapidly disappear, and that starch is converted into sugar in digestion. In a remarkable paper by Dr. William Hutson Ford, a number of interesting experiments are published, showing the presence of alcohol in small quantity in the normal

blood, resulting according to Dr. Ford, from the decomposition of sugar. In this paper, Dr. Ford makes the following statement:

"The destruction of alcohol, whose presence in the economy I have thus demonstrated, must be to a hæmal oxidation or 'combustion,' as a main source of animal heat. This combustion is maintained, not only by glucose derived from amylaceous food, but likewise from the proximate products of change in the nitrogenous tissues."[1]

The thermal phenomena observed in diabetes mellitus are of much interest in connection with the theory that hydrocarbons are converted into alcohol, the oxidation of which is an important factor in the production of animal heat. In nearly all cases of diabetes there is a constant and persistent depression of the animal temperature. The principal pathological condition in this disease is manifested by a discharge from the body, in the form of sugar, of the hydrocarbonaceous elements of food; and, as a consequence, these substances are not used in the production of heat. The result is a constant depression in temperature, with a loss of weight which is often very rapid, due to a consumption of the fatty and nitrogenized parts of the tissues, and certain parenchymatous degenerations which are observed particularly in the cells of the kidneys. It may seem paradoxical to say that diabetes is attended with a fever in which the temperature of the body is depressed. In progressive phthisis there is usually a fever, marked by elevation of temperature. It destroys the fatty and nitrogenized parts are consumed to an abnormal extent, as in fever, but the heat-producing action of the hydrocarbons being suppressed, even this excessive consumption of fats and albuminoids is inadequate to maintain the normal standard of the bodily temperature. The theory that the hydrocarbons are converted into alcohol which is oxidized in the body is entirely reconcilable with my view of the production of water as an important factor in the generation of animal heat. If alcohol be oxidized in the body, as it is in certain quantity, the production of water is inevitable. The heat-value of the hydrogen in alcohol being very great, and if—the hydrocarbons being discharged in the form of sugar in diabetes—the normal heat of the body be not maintained, the final oxidation of these hydrocarbons, with the consequent production of water, is an important factor in the production of animal heat. The excessive quantity of water discharged in diabetes probably represents a great part directly from the blood and the watery portion of the tissues, which accounts for the intense thirst always observed in grave cases of this disease.

In the administration of alcohol in the treatment of fever, we are really using the hydrocarbons in a form in which they may be immediately oxidized and do not require preparation by digestion. Thus we easily supply material to meet the excessive waste involved in the pyrexia, in much the same way as we administer peptonized albuminoids to meet the excessive waste of the nitrogenized parts of the tissues when the digestive powers are impaired.

It is a matter of universal clinical observation that there is great tolerance of alcohol in fevers and in pulmonary phthisis. This tolerance of an agent which is probably never useful in perfect health is strong evidence of a demand on the part of the system for the class of alimentary principles, the hydrocarbons, which alcohol represents; and it affords an absolute guide as regards the quantity that should be employed. The quantity which will be useful in individual cases may be small or it may be great. In certain exceptional cases, one or two ounces of spirit may be administered hourly for a day or two, with the best results; and this quantity may be taken without the slightest manifestation of alcoholic intoxication. With an alarmingly high temperature, a rapid and feeble pulse, and grave ataxic symptoms indicating impending death, alcohol may be given largely, but never to the extent of producing its characteristic toxic effects. In fever only such quantity of alcohol as is readily oxidized is useful; and any excess, which will certainly produce some degree of alcoholic intoxication and which must be eliminated as alcohol, will be productive of harm. In ordinary cases of continued fever it is seldom necessary or desirable to give more than eight or ten ounces of spirit daily.

I do not wish to be understood as advocating an indiscriminate use of alcohol in all cases of fever. Alcohol is indicated by an excessively high temperature, with the ataxic and other symptoms to which I have referred. In ordinary cases of typhoid fever, particularly in the early stages, it should be administered sparingly, cautiously, and tentatively. Its quantity should be reduced on it should be omitted at the first indication of alcoholic intoxication. Nevertheless, alcohol, judiciously administered, so that all that is introduced is promptly and completely oxidized, as it contributes material for consumption in the production of excessive heat, exactly in that degree does it retard destruction and degeneration of tissue, and it should be employed to supplement the use of matters that are regarded as nutritive.

In a paper published in 1879, I made a calculation of the heat-value of the ordinary brandy of the pharmacopœia, which I venture to quote:

"According to Brande,[1] cognac brandy contains 46 per cent. of absolute alcohol. With a specific gravity of 0.930, one ounce of brandy weighs 406.875 grains and contains 187.1625 grains of alcohol. The alcohol, with a composition of $C_2H_6O_2$, contains 12.9 per cent. of hydrogen, or 24.14 grains, and 56.65 per cent. of carbon, or 98.54 grains. The heat-value of 24.14 grains of hydrogen equals 214.77 heat-units. The heat-value of 98.54 grains of carbon equals 182.44 heat-units.[2] Taking, then, the total heat value of the hydrogen and car-

[1] Brande and Taylor: Chemistry, Philadelphia, 1857, p. 883.

[2] Mayer: Celestial Dynamics, Correlation and Conservation of Forces, N. Y., 1868, p. 261.

bon contained in one ounce of brandy, and taking no account of the oxygen contained, the heat-value amounts to 397.21 heat units.[1] If we assume that a man produces four heat units per pound weight of the body per hour, the amount of heat normally produced in twenty-four hours by a man weighing 140 pounds is equal to 13,440 heat units. The quantity of brandy required to supply this amount of heat, according to the calculations I have just made, would be a little less than 34 ounces. Theoretically, then, it is easy to see how alcohol may furnish material to supply heat and save waste of tissue in fevers. It is not very unusual in certain stages of fever, to administer from 16 to 32 ounces of brandy in twenty-four hours."[2]

I am deeply sensible of the great honor of an invitation to address this Congress. This invitation I felt bound to accept, although with a full appreciation of the responsibility which it involved and with much doubt and timidity with regard to my ability to do even a small measure of justice to the occasion. I have selected a topic of great present interest, which has been the subject of much fruitful study within the last few years. In discussing this subject, I have endeavored to apply the physiological methods of study which have lately contributed so largely to the advancement of pathology and therapeutics. I have been led by my reflections upon animal heat and fevers to present certain views which I venture, in conclusion, to summarize in the following propositions:

1. Fevers, especially those belonging to the class of acute diseases, are self-limited in their duration, and are due each one to a special cause, a microörganism, the operation of which ceases after the lapse of a certain time.

2. We are as yet unable to destroy directly the morbific organisms which give rise to continued fevers; and we must be content, for the present, to moderate their action and to sustain the powers of resistance of patients.

3. The production of animal heat involves oxidation of parts of the organism or of articles of food, represented in the formation and discharge of nitrogenized excrementitious matters, carbonic acid and water.

4. As regards its relations to general nutrition and the production of animal heat, water formed in the body by a process of oxidation is to be counted as an excrementitious principle.

5. Fever, as observed in the so-called essential fevers, may be defined as a condition of excessive production of heat, involving defective nutrition or inanition, an excessive production and discharge of nitrogenized excrementitious matters and carbonic acid, with waste and degeneration of the tissues, and partial or complete suppression of the production and discharge of water.

6. Aside from the influence of complications and accidents, the ataxic symptoms in fevers, the intensity and persistence of which endanger life, are secondary to the fever and are usually proportionate to the elevation of temperature. These symptoms are ameliorated by measures of treatment directed to a reduction of the general temperature of the body.

7. The abstraction of heat by external cold and the reduction of temperature by antipyretics administered internally, without affecting the special cause of the fever, improve the symptoms which are secondary to the pyrexia.

8. In health, during a period of inanition, the consumption of the tissues in the production of animal heat, is in a measure saved by an increased production and excretion of water.

9. In fever, the effects of inanition, manifested by destruction and degeneration of tissues, are intensified by a deficient formation and excretion of water.

10. Alimentation in fever, the object of which is to retard and repair the destruction and degeneration of tissues and organs, is difficult mainly on account of derangements of the digestive organs; and this difficulty is to be met by the administration of articles of food easily digested or of articles in which the processes of digestion have been begun or are partly accomplished.

11. In the introduction of the hydrocarbons, which are important factors in the production of animal heat, alcohol presents a form of hydrocarbon which is promptly oxidized, and in which absorption can take place without preparation by digestion.

12. Precisely in so far as it is oxidized in the body, alcohol furnishes matter which is consumed in the excessive production of heat in fever, and saves destruction and degeneration of tissue.

13. The introduction of matters consumed in the production of heat in fever, diminishes rather than increases the intensity of the pyrexia.

14. As the oxidation of alcohol necessarily involves the formation of water and limits the destruction of tissue, its action in fever tends to restore the normal processes of heat-production, in which the formation of water plays an important part.

15. The great objects in the treatment of fever itself are to limit and reduce the pyrexia by direct and indirect means; to limit and repair destruction and degeneration of tissues and organs by alimentation; to provide matters for consumption in the abnormal production of heat; and thus to place the system in the most favorable condition for recuperation after the disease shall have run its course.

[1] It is well known that the heat-value of certain elements in combination is less than of the same elements in a free state, as was shown by the experiments of Favre and Silbermann, made many years ago; but with regard to alcohol, the difference is only about one-third of one per cent. Favre et Silbermann: Annales de chimie et de physique, 3me série, Paris, 1842, tome xxxiv. p. 357, and Milne Edwards: Leçons de physiologie, Paris, 1863, tome viii. p. 25.

[2] Flint: Experiments and Reflections upon Animal Heat. American Journal of the Medical Sciences, Philadelphia, April, 1879. p. 362.

THE EXPERIMENTAL METHOD IN SCIENTIFIC MEDICINE AND ITS RELATIONS TO BACTERIOLOGY.

An Address delivered in General Session, September 7, 1887.

By PROFESSOR MARIANO SEMMOLA,
OF NAPLES.

Gentlemen: Honored by an invitation to deliver before you a General Address, I feel at once the duty of expressing to you my recognition of an honor superior to my modest merit, and I am obliged to ask your indulgence in the task, since I desire rather to bring to you the greeting, entrusted to me by my Government,

than to appear as worthy to take a prominent part at this feast of medical science. In the name of Italian Medicine, I greet you, my illustrious colleagues of the United States, representatives of the progress of medicine in the New World; and first, I thank you for the courtesy with which you have received me.

An humble son of Italy, I have always longed to see Italian medicine adorned with its worthy title, therefore, when invited, by your country, to address you, I thought I could best merit the esteem of scientific men, and prove myself a worthy child of Italy, by demonstrating one of the greatest discoveries of modern medicine, namely, the experimental method, which was born with Galileo, in Italy, and which has been the only loadstone of her scientific discoverers.

On the banner of ancient medicine was inscribed the motto "Conserve strength and cure disease." This motto should be the talisman of every student of medicine to guard him from the evils of idle, but scientific curiosity. It is easy to see that because there are sick there are physicians, and this continued existence of both classes has occasioned the sarcasm, "Physician, heal thyself," which fully expresses the irony of public opinion regarding unsuccessful medicine. I can conceive of a physician or chemist who is not an artisan, or a botanist who is not an agriculturist, but I cannot conceive of a physician who does not study to cure the sick, because a physician's study is inexorable, and, also, is his true and only mission; for myself and other thinking men, the true test of medical progress is the great or small number of patients rescued from death. This standard may seem prosaic, but it is the bare truth, and this truth renders medicine one of the most important factors in civilization, because wherever men strive for a common aim, medicine is a common interest. "Mens sana in corpore sano" is the true expression of human felicity. Whatever man's condition, his greatest care is to preserve strength and life; sickness and death represent disorder, anguish, and desolation in the household. Family ties are ties of a community, and the death of an individual may alter the destinies of a nation.

In no other branch of science is there so ardent a desire to solve unsettled problems as in medicine. We naturally hope to reach the solution of the problems of healthy and morbid activity, and this hope ever reappearing, has inspired mankind through all ages, and will do so in the future. From Hippocrates to Koch and Pasteur, from the age when man believed himself to possess the knowledge of the Infinite to the present, when analytical research threatens to extinguish all sentiment, for twenty centuries the human mind has struggled through a maze of misapplied reasonings, until it has emerged into the clear light of a critical observation and positive scientific and experimental research. Actual progress in physical and chemical science began in the seventh century, when those discoveries were made which rendered possible the subsequent development of biology as one of the experimental sciences, a development destined to save medicine from the wreck which had befallen other branches of human knowledge. After centuries of darkness a light dawned, destined to guide the steps of the votaries of medical science. This beacon light, gentlemen, was experiment, the objective method as contrasted with introspection and deduction. As Bertholiet has said: "The world is not to be conceived by guessing, but by observing." The progress of experimental science is an epic poem whose chief actor is humanity subduing nature.

When evolution pauses, revolution starts the onward march, and such excessive energy may be tolerated when in science or in politics the occasion demands; but natural evolution is consecutive as well as progressive, and he who would push onward must stop within the bounds of natural evolution. This harmony of evolution and revolution is the law of the existence of good and evil, a principle underlying not only science, but the very being of humanity in its different phases. Medicine, like the other sciences, has attacked the innermost citadel of nature, and demands the secrets of life and death; she aspires to mathematical precision, and would enunciate laws whose observance shall be binding upon her votaries. What a golden age for humanity will be the consummation of this hope! It will not be said of medicine then: "Ars medendi, sed ars semper sanandi." He whose therapy fails to reach this point has failed in attaining the object of his art and walks in fruitless quest, attaining nothing; such is history's teaching. The early traditions of therapeutics have preserved to us, through the ages, the first treasures of medicine in mercury, quinine, and iodine; nor have all the discoveries of modern medical science equalled in the treatment of some of the most severe diseases, this foundling child of empiricism. *We affirm, then, that the experimental method in medicine has for its purpose the determination of the phenomena of nature and their causes.* The experimental method admits no individual dogmatic authority, nor has it anything in common with the theories of hypothetical methods. The individual loses his personal authority in comparison with the teachings of demonstrated science. As Goethe has well said: "There is no channel of communication between mind and matter but experience."

Observation and coördination of facts and the formulating of laws is the natural sequence. The experimental method is composed of three elements, observation, the formation of hypotheses, and their verification. The individual often hastens to spread abroad a new discovery, not waiting to prove it, thus injuring, by his premature action, the cause of truth which he seeks to serve. Pascal has described such men by saying: "They never seek causes themselves, but only the way of finding them." Ostrich-like, the framer of a false hypothesis in science hides himself behind the confusion of ideas, while his failure is apparent. Medicine then must proceed in the path which we have narrated, if it will regenerate itself; from this rule there are no concessions, no exceptions. Finally, there must be either empiricism old or new, or an experimental science.

The problem assigned to medicine is very simple; to determine the conditions of vital existence and its phenomena in healthy and diseased organisms. It is not my purpose to describe the application of the experimental method to physiology, by which so many facts of clinical importance have been ascertained. To reach this degree of certainty, it needed more than half a century of study, without counting the precious foundations which biology had prepared for it since the last century. It is sufficient to remember that from the biological chemistry of the blood we now know little or

nothing at the utmost; and the ontological notions which seem to be most correct, are threatened by a revolution since the recent researches of Angelo Mosso, a son of Italy. And we have probably to begin anew.

Scientific and experimental medicine proposes to itself to discover the conditions of existence of the phenomena belonging to life, or to regulate the determination of them, and these are to be the columns of Hercules. Medicine, like all other sciences, never demands why, well knowing that the first causes of things are inaccessible, and that to every scientist it should suffice to know in which physical and chemical conditions this or that phenomenon manifests itself, so that he can modify and govern it at his will.

Which are the phenomena that the physician studies? The answer is the functional disturbances or symptoms of sickness. What are the physical and chemical conditions of these phenomena? The natural causes of the sickness? This is the most simple form of the pathological problem. To arrive logically at the third part of the solution, is the most difficult: that is to say, how can these physical and chemical conditions be artificially modified in disease to reproduce normal physical and chemical conditions, or to make disappear the phenomena of disease and cause a return of the normal functions? It is enough, generally, to announce this series of problems to discourage investigations. This honest confession would appear to me the best introduction to the future scientific medicine. And there is no help. If the scientific medicine has to be constituted, this is the logical progression of its steps. Beyond this orbit all is empiricism and ignorance, because there does not exist any half science or conjectural science. Following this way the physician has had already the experience of the physicist and chemist, who knew profoundly the existence of natural phenomena, and then modified them, turning them to his profit; the physician has to gauge the stupidity of this sentence, which we hear repeated nowadays, and which he himself often abuses, in the name of badly understood progress, that "Man commands nature."

Now, in reality, the scientific man and also the physician, if he determines to be, and not merely appear, a physician, instead of commanding nature, is to obey her. Let the manufacturers ask themselves who are the legitimate sons of scientific progress; let them ask Franklin, Stephenson, Daguerre, Edison, and other great benefactors of humanity. Yes, it is true they have governed the lightning, they have permitted man almost to annihilate distance, they have given to him the lighthouse of the universe, and controlled the lightning flash, and caused the electric light to rival the sun. But they were worthy and faithful priests of science, and made no pompous promises; they did not discover all the secrets of the phenomena which they undertook to study. If a single link of the long chain of their researches had not been elaborated, no one of you can doubt that the chain would certainly have been broken at the test, and the wonders prematurely announced would have fallen as nothing. Here is what distinguishes inexorably true scientific and experimental progress.

In biology, and especially in the progress of the pathology and therapeutics, this fundamental principle is very often forgotten. And this forgetfulness seems to me to be the true cause which has paralyzed until now the useful results of the immense mass of researches made in the field of medical science.

In experimental science, isolated facts are an idle and dangerous luxury, and in medicine, the isolated and scattered riches cannot produce by themselves useful progress in clinical study. The doctor at the bedside of his patient, after a minute analysis, *needs a synthesis to form a proper opinion, and without synthesis even a most learned doctor is useless to his patient.* In reality, then, we are spectators and authors of really barbarous methods. It amounts to but little that one system be constructed in the name of a hypothesis, and another in the name of a fact; and you will still say it little matters if these systems are called vitalisms, rather than cellular pathology, or bacteriology.

At the present time, medicine unfortunately continues to be the victim of system, and the system of to-day is bacteriology. For those who love sincerely the progress of medicine, it seems to me to be but little charity to hide this dangerous reality, as it would be undoubtedly childish, if not dishonest, to ridicule the great teachings which are included in the discoveries of modern times of a true microörganism continuously at war with man. It is true that in the pages of high genius, like Brieger, Klebs, Sternberg, and others, it is stated distinctly how, for the present, the limit is to be fixed to this new era of pathology and therapy; but the current of mediocrity overwhelms all, conquers the masses, and inspires then absolutely those who now have no science and who are ready to cry "Hail!" to-day to Christ and to-morrow to Mahomet. The only reason which has permitted a systematic invasion most attractive in its domination, of cellular pathology, is the complete forgetfulness of the laws of the experimental method in the progress of medicine. Without pretending to seek the prophets of bacteriology in the poem of Lucrezeio ("De natura rerum") or in the "Contagium animatum" of the Middle Ages, I will only say that the idea of living microscopic germs which insidiously penetrate the human organism by way of the lungs, stomach, and skin, and are capable of developing definite diseases, is not new; it was already presented to the mind of the physician in former times under another name; and it would suffice to remember the universal panacea of camphor, which, more than half a century ago, held in check for a long time a good part of the medical faculty.

But these trials do not deserve any credit for the effective progress of micro-biology, of which the first light is owed, undoubtedly, to Cagniard Latour, who formally announced that if brewer's yeast fermented sugar, this was the same as the generation of life. No one could have believed in those times—1825—that in these words would be included the embryo of one of the most fortunate natural discoveries of the nineteenth century. I do not purpose here to tell you through what rigorous and scientific ways this great discovery has advanced, and what obstacles it had to conquer. I can remember that the memorable researches of Colin and Davaine, in 1851, on the bacteria of carbuncle, and those of Pasteur on the transformation of lactic acid to butyric acid (1861) and on the silkworm disease, have been the starting-point of the scientific modern movement. Researches more memorable, inasmuch as they show that when science walks, without overstepping

herself, on the path of rigorous experience, she will arrive at satisfying and lasting results.

The work of Rüdinger who was the first to presume to scan the vast horizon which opened before scientific medicine in regard to physical and chemical conditions necessary for the development of microbes, should suffice to define in a precise manner the favorable and necessary conditions to the development of the common mould fungus, known under the name of Aspergillus niger. He demonstrated that the slightest trace of nitrate of silver in the proper culture medium would be sufficient to hinder the development of these mould fungi. He should have infused in investigators a great prudence and a great prudence, but for more than ten years pathology instead of advancing with measured and secure steps, pretends to become, itself, pathology. It was a true whirlwind, enveloping all and, at the side of precious discoveries like that of the bacillus of anthrax, of tuberculosis, and some others which are an honor to science, came forth from every part microscopical researches on the existence of new microbes in all diseases, and every sickness seems to have found its true germ, destined, perhaps, to die before being registered. For the past five or six years one could not open a paper without finding registered the discovery of one or more new pathogenic microbes. I have to say that while attention remains so distracted by many problems unsolved in pathology, the easiest way to enter into the path of celebrity has been, and is, the announcement of some new microbe or some new bacillus. Pathology has come to be proclaimed almost the same as bacteriology. Every clinician finds it indispensable to open at the side of his hospital ward a laboratory for bacterial culture. On one side of the hospital is a room for the cultivation of bacteria, and on the other is a room for patients, and the expenses of the first are often greater than the allowance for food for the second.

These discoveries are proclaimed on all sides as the true foundation stone of biology, and doctors hasten with eagerness to proclaim that the only end for cure in sickness is inoculation of microbes, or at least to prepare the organism for surviving the work of the cure by inoculation.

It would be a superfluous work in this place to state the ridiculous childishness which filled the minds of those, who finding it more convenient not to follow the thorny path of the experimental method, attached themselves eagerly to the organ of any new idea, believing that this would be enough to confirm themselves as progressive men. The learned and honest student who has to-day a desire for knowledge would only have to pass in review the strange cures which have been proposed for diseases in the last ten years and note the progress of events, to doubt his own eyes! All these curative propositions were made and are still repeated in the homage of scientific medicine. It is sufficient to recall the trials which were made in many clinics with the most poisonous parasites, to kill the bacilli of tuberculous and consumptives, aggravating, instead, their miserable existence. It is enough to remind you of carbolic acid and salicylate of soda advanced as sure remedies for cholera and yellow fever. On the other hand, one must not be unjust and doubt the honesty of a progressive man because a certain theory has failed to make itself felt among those who put the organism at its greatest disadvantage by applying dangerous preparations of pharmacy, useless according to the teachings of the laboratory, to inoffensive processes. The use of one poison, whether bacillus or drug, to drive out another is irrational and highly injurious, as shown by statistics. Man lives surrounded by microörganisms, over which he triumphs, as he does over the material world.

The biology of the present must solve the problem of man's relation to these microörganisms and the source of their power. Bacteriology has gone beyond its premises, beyond its point of start, and is an unworthy invasion in the field of evolution. I have found the air by analysis full of microbes, but as yet we possess no test as to their being injurious or harmless germs. We cannot ascertain correctly the soil in which microbes grow nor their mode of life, and hence one factor of the problem remains unknown. The claim of Klebs to discriminate between a poisonous germ and a large family of non-poisonous germs seems unproven. Plants are edible in proportion to their cultivation and soil, not differing morphologically from their poisonous fellows; and if an analogous condition holds good with microbes, the reasoning of the bacteriological method is false. In disease where several microbes are present, we cannot discover which is the fatal one. Observers are too ready to assert that diseases following inoculations are produced by the germ; and I appeal to all lovers of truth to determine if possible which diseases are dependent upon inoculation and which are not. Who has seen malaria, or diphtheria, or any disease, in which it was *proven* that the disease depended upon the microbe? Rodents, ruminants, and some other living organisms, show predilection for anthrax; but the carnivora are exempt from many diseases caused by germs. Davaine and Koch failed in some attempts to transfer certain germs from one animal to another. What positive demonstration can they furnish of the causation of disease? Our physical and chemical knowledge of the blood of different animals is so small that we have no means of knowing what animal furnishes a suitable soil for the growth of these microbes. The chemistry of the tissues of an animal is the true basis of judgment of its inoculability or non-inoculability by germs. This, I think, no scientific man will doubt.

I do not see in modern methods of bacteriological research the true experimental method. Diseases are produced by inoculation, but are these morbid processes dependent upon the germ or upon the soil in which it is implanted? Demonstration by this method fails; nothing is positively proven; and in the majority of cases common good sense pronounces against the attempted proof. If this method be correct, physiology must be suppressed or reversed. Suppose a man, when sweating, should enter a cave and remain there several hours, contracting a violent acute rheumatism, do you mean to say that I must seek the cause of his disease in a microbe, or did a profound derangement of the physiological conditions occasion the disease? If I find a few microbes, shall I not consider them the effect and not the cause of the disease? In osteomalacia and endocarditis acuta the relation affirmed to exist between the microbe and the disease has not been proven. This failure illustrates the failure of this method when applied

to the true experimental study of disease. Staphylococcus aureus, when injected into the bloodvessels, will cause general infection, but not osteomalacia purulenta.[1] If, after inoculation, a bone be broken and osteomyelitis purulenta occurs, I ask, in the interest of scientific men, if this occurrence proves the causation of the terrible disease in the helpless animal by the microbe? Endocarditis purulenta is not caused by the injection of microbes; the insertion of a sterilized sound through the carotid artery will cause injury and endocarditis with all its results. So many factors enter into the solution of the problem, that I regret, for experimental medicine, that such hasty observations should be considered of value.

The unknown quantity is too large a factor to be ignored, and any method which disregards it is too much like the utterances of the Delphic Oracle to be considered by thinking scientific men. The true therapeutics will be that science of medicine which shall relieve suffering with the certainty of success. Malignant pustule has occurred when the point of infection is removed; and a similar reasoning is applicable to typhoid fever. In phthisis, the terrible disturbances of nutrition in the patient are the principal factors of the disease, whatever the bacteriologists may say to the contrary; if the patient could rid himself of the bacilli, his life could not be saved. In the absurd miracles chronicled by surgical bacteriologists, the differences between defective antisepsis and curative antisepsis seem to me almost childish. Lister's discovery will doubtless remain an endless source of fame to him, and one of the treasures of the last half of the present century. But Lister's cleanliness closes the doors to poisonous materials which older surgeons had allowed to remain open through their carelessness. It is absurd to quote the success of Lister as an argument for the use of parasiticides. The destruction of microbes outside of the body by antiseptics is no criterion of judgment by which to estimate the success of intracorporeal disinfection. We recognize our inability to prove the entrance of germs by the many avenues open to them, and my long clinical experience leads me to the positive conviction that bacteriology is greatly beyond its reasonable assumptions.

I have shown how bacteriology has exceeded its proper limits, and I now desire to call your attention to its detrimental influence upon pathology. The true part played by bacteria in pathology is the production by them of certain noxious and decomposed elements of the blood, which substances, and not the bacteria, are the potent factors in the causation of disease. The treatment of the physical and chemical constitution and conditions of the blood is a much more fruitful field for study and investigation than a direct attack by germicides upon the bacteria. The human body in health is a laboratory in which are constantly conducted chemical activities of the most complicated nature, and this is doubly true in disease; the action of the pharmacopœia may be best explained by the effect of these substances upon the chemical composition of the elements of the body. The new school of experimenters in therapeutic medicine, among whom Nencki, Husemann, Gussenbauer, Kobert, and Georgi have given especial promise of brilliant results, have investigated sufficiently to refute the reasonings of the purely bacteriological experimenters. The securing of the proper chemical conditions of the body is the object of this school; in other words, to put the organism in harmony with that universe, created by chemical atoms, by which it is surrounded. We are led to follow the counsel of the hygienist, and say, preserve your health, conserve your strength, and disease will affect you but little. Science will show us the particular physical condition of the body which renders us open to the attack and lodgement of a particular microbe.

Hereditary phthisis is well known, as a convenient example of the chemical conditions of the body predisposing to infection by microbes, and the presence or absence of these conditions explains the personal immunity or liability to the disease. The statement that the predisposition to phthisis is not dependent on chemical conditions of the tissues, is the exchange of one ignorance for another. We do not know how to remedy this condition of the tissues which predisposes to the lodgement of the tuberculosis bacillus, except by hygienic strengthening treatment, food, and all exercises which tone, and strengthen, and increase the organism. Unhappily, we cannot ascertain in the laboratory what peculiar changes there are in the tissues which sometimes enable an animal, already attacked by tuberculosis, to endure further infection, and finally conquer the infection. What comparison can there be between the slight changes occurring in an animal deprived, in the laboratory, of fresh air and proper food and care, and the slow, but extensive, changes of tissue which go on in the human being, although apparently the individual is in good health? Physiologically and bacteriologically considered, between these two conditions there is an abyss. Science recognizes this, but has not the means of closer approximating to the truth. The most delicate chemical tests do not demonstrate the intermediate conditions of the organism which have rendered possible the lodgement of a bacillus. What has been said of tuberculosis can also be predicated of all diseases said at the present day to be caused by bacteria. The assertion that a good culture soil is present in those persons who are susceptible to smallpox, scarlatina, and other diseases of their kind, explains nothing.

What are we to say regarding the immunity which the first attack of parasitic diseases causes from a second? The theory that the first attack exhausts the soil favorable for bacteria, we cannot accept, because there is no reason why this material should not speedily reaccumulate after recovery. How are we to explain those cases of scarlatina which recur several times after the first attack in infancy? It is a mystery. How do we explain the fact that one case of scarlatina runs a typical course and recovers, and another case lingers with diseased glands and joints. I admire the ingenuity of bacteriologists, and I bring forward this statement to show in its true light, that their assumptions are not the corner-stone of a new clinical philosophy; but that no matter how germs may grow in broth or in the potato, we know as little from them as before. If you do not accept the chemical changes in the body which constitute a predisposition to tuberculosis, you may bid farewell to scientific conceptions of morbid processes. There can exist no superstructure of medicine, however

[1] Weichselbaum: Klinische Zeit und Streit Frag. Vienna, 1887.

true, however false, upon this foundation. One must remark with Victor Hugo, "I looked for an edifice, and I found a ruin!" In the itch insect we see the result of local irritation in furthering the spread of the mischief. A slight change in general nutrition and hygiene is often sufficient to secure the loss of the insect and the return of the person to health. In what way could these simple changes have influenced the chemistry of the tissues sufficiently to cause a repulse of the parasite? I believe that science should honestly confess its inability to solve these problems. Excepting the better known and stronger substances used in medication, we can say nothing certain regarding scientific therapeutics at the present day; and medical science is content to remain satisfied with the little which is known about the substances mentioned. The advance-guard of science represents the fly upon the oxen's back urging his huge leaders to plow.

The dictum of modern therapeutics is, that remedies are given to destroy germs; but by the same reasoning mercury is given for syphilis and quinine for malarial fevers, while the direct existence of disease germs has not been proven in either case. The assertions of the modern school are proof of the injurious domination of a mistaken idea, and adherents of these theories imagine that they see in the patient the germs which they behold on looking through the microscope. The fact that solutions of bichloride of mercury in strengths of 1 to 1000 and 1 to 4000 are efficient germicides, proves nothing regarding their effect upon the germ of syphilis, for the following reasons: It is commonly thought that bichloride of mercury combines with the albumen of the tissues and their sodium salts, to form combined albuminates of mercury; and that these compounds act upon the albumen in the syphilitic germ, which is impossible when the mercury has exhausted its combining powers in its first combination. To avoid these contradictions pharmacologists form a hypothesis. If we admit that mercury kills syphilitic microbes, it does so in a solution of 1 to 5000. To combat successfully the germs of syphilis it would be necessary, by calculation of body-weight, to give a patient fifteen grains of bichloride of mercury, an amount, I need not say, which would be fatal in its results. Following this calculation, it would also be necessary to give at least sixty or eighty hypodermatic injections daily in the treatment of syphilis, representing in all from five to six grains of the bichloride of mercury. If we remember that after the third or fourth injection, traces of albuminates of mercury are found in the urine, we shall see that the whole amount necessary to complete the natural cure must be very great. Following the same reasoning, why should not mercuric chloride cure tuberculosis? There is no necessity for reviving a theory followed with such sad results. Empiricism has no place in the temple of medical science—it is a dead issue.

The true experimental philosophy, seeking the causes and acting from truth thus derived, has made its healthful influence felt not only in medicine but in social science. To you Americans the experimental method is that not only of science, but of your government and its institutions. With empirical anarchy you have nothing in common. The great facts of clinical observation transmitted through centuries, are the precious basis of modern medical science. It is the duty of the physician, at present, to apply to these great stores of knowledge the clear light of the chemistry and physics of the present; its anatomy, pathology, and physiology, and thus to deduce rules of action for the investigation of new facts and new truths which arise in the clinical observations of to-day. In such a manner only can we hope worthily to contribute through an extended period of time, to the solid structure of truly scientific medicine.

Let use see to it that we adhere rigorously to the sound principles of correct observation, that we may avoid the errors of past ages and not stray from our onward path through the false light of erroneous hypothesis or extravagant generalization. Thought should be national in its true freedom and catholicity. Science knows no fatherland, and as long as it is fearless to conquer, will enlist under its banner the peoples of the earth. Each nation contributes characteristic studies to the accomplishment of the whole. To nations who look back to grand traditions, the remarks of Virchow, at the Congress of Naturalists at Hanover, in 1886, are particularly appropriate: "Science is unproductive when it has no national character," and that "Germany herself says that this scientific progress consists only in following her example—imitate no one if you wish to revive your science and reach your former grandeur." From no other corner of the earth could my humble voice reëcho more powerfully the history of my fatherland's experimental medical science than from America. Let us follow faithfully the banner of science, taking for our motto that message which the physician of the Egyptian army sent to Napoleon, "It is my duty to conserve and not to destroy."

MEDICAL PROGRESS.

A NEW COLORING MATTER IN URINE.—LEUBE reports that he has found a coloring matter in the urine of those suffering from osteomalacia, cystitis, and nephritis, which turns on exposure to the air from dark violet to black. This amorphous substance dissolves in ether; it is separated by dilute alkalies, not by acid; the alkaline solutions are at first reddish-brown and afterward yellow. This coloring matter is soluble in hot water, chloroform, and benzol. The alcoholic solution is decolorized by zinc, but assumes its color on exposure to the air. The solutions show characteristic spectra or flourescence.—*Fortschritte der Medicin*, July 15, 1887.

PERITONITIS PRODUCED BY FOREIGN BODIES.—PERNICE has made experiments by injecting small quantities of concentrated mineral acids, acetic acid, carbolic acid, a concentrated solution of bichloride of mercury, and nitrate of silver into the abdominal cavities of puppies and young pigs; peritonitis followed, and sometimes necrosis and intestinal perforation. The peritonitis was serous or sero-fibrinous, without suppuration. In the exudate was a form of micrococcus, generally diplococcus or chain bacterium, which liquified gelatine. These bacteria probably come from the blood of the animals, for they were found in the blood of healthy animals, and abundantly in the air of the laboratory and stalls where the animals were confined. Pure cultures of these bacteria produced no peritonitis.—*Centralblatt für klinische Medicin*, July 16, 1887.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, SEPTEMBER 10, 1887.

THE INTERNATIONAL MEDICAL CONGRESS.

As will be seen from our Washington dispatches, the Ninth International Medical Congress was duly opened in accordance with the announced programme, and is in the midst of its sessions as we write. It has been favored with almost perfect weather, and its members have had the opportunity of seeing one of our most beautiful cities under exceptionally favorable conditions of sky and air.

A part of the work of the Local Committee of Arrangements has been well done, the rooms provided for the different Sections were sufficient and well located, and the arrangements for registration were satisfactory, except for a few hours during the greatest rush. The part relating to entertainments, we regret to say, however, was not so satisfactory, as may be inferred from the statement of the Chairman of the Committee to the Congress on Wednesday morning, in which he referred to "the humiliating spectacle of Monday night," and spoke of the foreign guests as having been "engulfed in a mob at the President's," both of which expressions were more than justified by what occurred.

On the other hand, it is with great pleasure that we call attention to the admirable manner in which the Secretary-General has performed the onerous and difficult duties of his office. To the signal executive ability and unwearying zeal of Surgeon-General Hamilton is due, in a large degree, the measure of success which the Congress has attained.

Great complaint has been made by the Local Committee and others, as to the insufficiency of funds for social entertainments, excursions, etc., and this deficiency has been, with questionable justness, attributed to the parsimony of Congress, which has been freely denounced in consequence. The fact is, however, that at only two of the preceding Congresses has any grant of money been made by the Government of the country in which the meeting was held, and the largest of these grants—*i. e.*, that made by Denmark—was precisely that given by Congress, viz., $10,000. Municipalities have in three cases voted funds for entertainments, but the chief source of supply has always been private contributions, as it should be. Certainly, in the beginning, no governmental aid was expected, and it was so stated at Copenhagen, when the invitation was presented to the Executive Committee of the last Congress. The complaints referred to are in very bad taste, and can in no way excuse the mismanagement of the social features of the Congress.

The number of persons actually present is upward of 2500, and of these about 130 are from abroad. A number of the foreign members were registered by mail, and were not in attendance. The election as vice-presidents of a number of foreign gentlemen who were known not to be present, or even registered, was in opposition to all precedent, and was not a wise or dignified proceeding.

As to the character of the work done, the amount of new and valuable information which has been presented, and the probable influence which these will have on the science and art of medicine in the future, it is perhaps too soon to venture comment or prediction, but the opinions expressed by a few prominent men, which we print elsewhere, are interesting in this regard. The preliminary programme announced about five hundred papers as having been promised. Quite a number of these were not on hand when called for, but there were many others offered which were not on the programme, and it is safe to say that each member of the Congress will be entitled to receive several very bulky volumes in the shape of its transactions, and that the editors of these volumes are not to be envied.

The American profession has desired to extend a most cordial welcome to the foreign members who honored us by their presence at Washington, and it is a source of gratification to find that so many of our guests have shown their appreciation of this sentiment by bringing with them scientific contributions which cannot fail to add materially to the merits of the Congress as an educational gathering.

A feature of the Congress has been the attention given to it by the daily press, and the likenesses given in the Washington papers of men whom they consider specially worthy of honor form a collection which is unique in medical portraiture.

We evince our own interest in the Congress by devoting this entire number, which contains sixteen extra pages, to the report of its proceedings.

PROFESSOR FLINT'S ADDRESS.

IN the choice of the subject of Fever, upon which to address the Congress, Dr. Flint was peculiarly happy, as he not only had an opportunity of discussing a scientific problem of the deepest interest, but he was also able to deal in a very practical manner with principles of treatment of everyday importance to the practitioner.

The theory of fever advanced by Dr. Flint has, in certain respects, the merit and attraction of novelty. He would define fever, as observed in the so-called specific diseases, as a condition of excessive formation of heat, involving defective nutrition, an excessive production and discharge of nitrogenous matters, with wasting of the tissues and *partial or complete suppression of the production and discharge of water*. This latter proposition forms the central point in his theory. Physiological considerations, which are dealt with at length, indicate that water is formed in the body by the union of oxygen and hydrogen, and is often discharged in excess of the water of food and drink. This water is a product of oxidation, an excretion which may be compared with urea and carbonic acid, and its formation is closely connected with the process of calorification. In health this production of water with the generation of heat "seems to carry with it the conditions for equalization of the animal temperature by cutaneous transpiration." In simple inanition and in excessive muscular exertion there is an increased discharge of water, the formation of which economizes the tissues of the body, and in these conditions, were it not for this increased formation of water and the cutaneous transpiration, the temperature of the body would be raised. In pyrexia with an increase in the discharge of carbonic acid and urea, there is a diminished formation and excretion of water, and it is the suppression or reduction of these important processes which allows the rise in temperature.

Dr. Flint's views on the rational treatment of fever follow naturally, and are based upon the physiological considerations. Clinicians will read with great interest his remarks on the value of alcohol as a food in fever. It presents a form of hydrocarbon which is readily absorbed and promptly oxidized, and saves destruction and degeneration of tissue. And as in its oxidation water is formed, its action in fever thus "tends to restore the normal processes of heat production, in which the formation of water plays an important part."

The question of fever presents many difficulties, and before we can expect a full and clear explanation of its pathology, we must know more of the laws regulating the formation and discharge of heat in health. The views here announced are valuable as based on careful physiological observations, and though some of the conclusions will excite opposition and may be open to criticism, there can be no doubt that Dr. Flint has given us a most suggestive contribution to this complicated subject.

THE HYPODERMATIC USE OF ERGOTIN.

IN hemorrhage inaccessible to mechanical means of arrest, the hypodermatic use of some form of ergot has proved one of the most successful of therapeutic expedients. In puerperal hemorrhage the abdominal wall was chosen as the place of injection, and the fluid extract of ergot and various preparations of ergotin have been employed. This mode of treatment, however, is not without unpleasant results in an irritative effect of the drug, producing pain, and often abscesses.

To avoid these objectionable features, BUMM, in an article in the *Centralblatt für Gynäkologie*, No. 28, 1887, strongly urges the selection of the nates as the place of injection; the needle of the hypodermatic syringe should be inserted perpendicularly in the gluteal muscles for its entire length. The muscular tissue is shown to be less sensitive and more efficient as an absorbent than the subcutaneous tissue; experiments upon animals show that twelve hours after such injections all traces of the fluid disappear, while portions of material injected into the abdominal wall remain for more than twenty-four hours.

A second point of importance is the choice of an appropriate preparation of ergot. Bumm believes that the strongly acid reaction of the extracts and their solutions is an important factor in the production of the burning pain so often caused by injections. The suggestion of other writers, that the power of the drug is impaired by neutralization of its solution, Bumm did not find verified in the cases of two patients whom he treated for uterine fibroids, using in alternation acid and neutral solutions. The addition of soda to full neutralization gave a clear fluid which was perfectly efficient.

The use of too concentrated solutions is another cause of irritation. Ordinarily one part of ergotin to five of water is recommended, but much more rational is the selection of a five or ten per cent. watery solution. A better result is obtained from a larger quantity of a weaker solution, both as regards rapidity of absorption and continued action, than from a smaller quantity of a stronger solution. A slight sensation of burning, or tenderness on pressure, are the only unpleasant after-effects which Bumm has seen to persist, and for a few hours only, after this treatment.

THE Crown Prince of Germany has written to Professor Virchow, announcing a continued improvement in the condition of his throat, and thanking the renowned pathologist for his investigations

into the character of his Imperial Highness's malady.

It is reported that the Queen has intimated her intention of conferring the honor of knighthood upon Dr. Morell Mackenzie in recognition of his professional services to the Crown Prince.

THE American Gynecological Society will hold its annual meeting at the hall of the Academy of Medicine, in New York, on Thursday, Friday, and Saturday, of next week. Dr. A. J. C. Skene, of Brooklyn, is the President for the year.

At the meeting of the American Dermatological Society, held at Baltimore, last week, Dr. I. E. Atkinson, of Baltimore, was elected President for the ensuing year.

ACCORDING to a press cablegram there were reported last Tuesday 6 new cases of cholera and 2 deaths in Rome, 13 new cases and 10 deaths in Palermo, and 27 new cases and 18 deaths in Catania.

AN epidemic of scarlet fever is now prevailing in London. The fever hospitals are reported to be full of patients, and up to September 7th, 1120 cases had been reported to the health authorities.

SOCIETY PROCEEDINGS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Held at Washington, September 5–10, 1887.

(Specially reported for THE MEDICAL NEWS.)

MONDAY, SEPTEMBER 5TH.

GENERAL SESSION.

THE Congress was called to order promptly at 11 o'clock, by the Chairman of the Executive Committee, HENRY H. SMITH, M.D., of Philadelphia. He said it was known to all present, as well as to physicians throughout the world, that in May, 1884, representative members of the profession in the United States decided to send a fraternal greeting to the Eighth International Medical Congress, then about to assemble in the capital of Denmark, and ask that the Ninth International Medical Congress might meet in the city of Washington. This invitation being accepted, an executive committee was named to make the necessary arrangements, and the result of their labors was seen in this large assembly, which the register showed contained many of the most brilliant and distinguished medical minds of Europe, Asia, and America. To welcome these guests of the profession, and show his interest in a great humanitarian object, the President of the United States had consented to open the Congress for organization.

The President arose, and when the applause had subsided, he said:

"I feel that the country should be congratulated today upon the presence at our capital of so many of our own citizens and those representing foreign countries who have distinguished themselves in the science of medicine and are devoted to its further progress. My duty on this occasion is a very pleasing and a very brief one. It is simply to declare that the Ninth International Medical Congress is now open for organization and for the transaction of business."

ELECTION OF OFFICERS.

The Chairman of the Executive Committee then nominated Dr. N. S. Davis, of Chicago, for President of the Congress, and he was elected by acclamation, and Dr. Francesca Durante, of Italy, and Deputy Surgeon-General Jeffry A. Marston, of the British Army, were appointed a committee to escort him to the chair.

Dr. J. B. Hamilton, Supervising Surgeon-General of the United States Marine Hospital Service, having been nominated and unanimously elected Secretary-General of the Congress, took his place and nominated the following gentlemen as

VICE-PRESIDENTS OF THE CONGRESS.

United States.—Surgeon-General Moore, U. S. A.; Surgeon-General Gunnell, U. S. N. (ex-officio); Dr. William Brodie, Detroit; Dr. W. W. Dawson, Cincinnati; Dr. A. Y. P. Garnett, Washington; Dr. Edward M. Moore, Rochester; Dr. Tobias G. Richardson, New Orleans; Dr. Lewis A. Sayre, New York; Dr. Joseph R. Smith, New York; Dr. J. M. Toner, Washington.

London.—Dr. Cuthbert H. G. Bird; Dr. A. Pearce Gould; Mr. Ernest Hart; Dr. Jonathan Hutchinson; Sir James A. Hanbury; Sir William Jenner; Dr. Fred B. Jessett; Dr. William H. Lloyd; Dr. William Murrell; Dr. Jeffrey A. Marston; Mr. Thomas J. MacLagan; Dr. John Marshall; Dr. Morrell Mackenzie; Dr. William A. MacKinnon; Dr. Charles D. F. Phillips; Mr. Richard Quain; Sir John W. Reed, K. C. B.; Mr. William H. Savory; Sir Edward H. Sieveking; Dr. John Tweedy; Sir Henry Thompson; Sir William W. Gull.

England.—Dr. J. Ewart, Brighton; Sir B. Walter Foster, Birmingham; Sir Thomas Longmore, Netley; Dr. John D. MacDonald, Surrey; Dr. Withers Moore, Brighton; Sir William Roberts, Manchester; Dr. John B. Sanderson, Oxford; Mr. Lawson Tait, F.R.C.S., Birmingham; Sir John Tomes, Surrey; Dr. George M. Humphrey, Cambridge.

Scotland.—Dr. McCall Anderson, Glasgow; Dr. Thomas Annandale, Edinburgh; Dr. John Chiene, Edinburgh; Dr. T. R. Fraser, Edinburgh; Sir Douglas Maclagan, Edinburgh; Dr. George H. B. Macleod, Glasgow; Sir William Turner, Edinburgh.

Germany.—Dr. William Koch, Berlin; Dr. Frederick Esmarch, Kiel; Dr. A. L. Gusserow, Berlin; Dr. W. D. Müller, Berlin; Dr. Carl von Mosengsill, Bonn; Dr. G. Unna, Hamburg; Dr. Waldeyer, Berlin; Prof. E. Winckel, Munich.

France.—Dr. Dujardin-Beaumetz, Paris; Prof. A. Charpentier, Paris; Dr. A. Chervin, Paris; Dr. Vallin, Paris; Prof. Trelat, Paris; Dr. Léon Le Fort, Paris.

Austria.—Prof. Carl Braun, Vienna; Dr. Ehrendorfer, Vienna; Dr. Hans R. von Hebra, Vienna.

Switzerland.—Dr. F. Dumont, Berne; Dr. Theodore Kocher, Berne.

Italy.—Dr. Francesco Durante, Rome; Dr. O. Morisani, Naples; Dr. Mariano Semmola, Naples.

Egypt.—Dr. A. S. Grant-Bey, Cairo.

Halifax.—Dr. Thomas M. Dolan.
Ottawa.—Dr. J. A. Grant.
Havana.—Dr. Nicholas Jose Gutierrez.
Copenhagen.—Dr. Wilhelm Meyer.
Honolulu.—Dr. John S. McGrew.
Belgium.—Dr. Leopold Servais, Antwerp.
Dublin.—Sir William Stokes.
East Indies.—Dr. George J. H. Evatt.
Hague.—Dr. J. E. de Virij.

The President of the Congress put the question, and the gentlemen named were elected by acclamation.

A Delegate.—Mr. President, I would like to ask, sir, if it is proper to elect as Vice-Presidents those who are not members of the Congress. I protest, and move to amend—

President Davis.—It is hardly proper to interrupt the proceedings now. It was impossible to know who would be here in person. Gentlemen named were notified, and all accepted the places. The list as read is elected, and I have the honor to invite the Vice-Presidents to seats on the stage.

The following gentlemen were then elected

PRESIDENTS OF SECTIONS.

General Medicine, A. B. Arnold, M.D.
General Surgery, W. T. Briggs, M.D.
Military and Naval Surgery, Henry H. Smith, M.D.
Obstetrics, DeLaskie Miller, M.D.
Gynecology, Henry O. Marcy, M.D.
Therapeutics and Materia Medica, Traill Green, M.D.
Anatomy, W. H. Pancoast, M.D.
Physiology, J. H. Callender, M.D.
Pathology, A. B. Palmer, M.D.
Diseases of Children, J. Lewis Smith, M.D.
Ophthalmology, J. J. Chisolm, M.D.
Otology, S. J. Jones, M.D.
Laryngology, W. H. Daly, M.D.
Dermatology and Syphilography, A. R. Robinson, M.D.
Public and International Hygiene, Joseph Jones, M.D.
Climatology and Dermatology, Albert L. Gihon, M.D.
Psychological Medicine and Diseases of the Nervous System, J. B. Andrews, M.D.
Dental and Oral Surgery, Jonathan Taft, M.D., D.D.S.

The Congress then confirmed the selection of the remaining officers of the Congress.

THE REPORT OF THE SECRETARY-GENERAL

was then read by Surgeon-General Hamilton. According to the practice at former associations of this body, the Secretary must make a report of the work performed since the session of the Congress last preceding. In doing this it was his aim to occupy as little time as possible.

He said it was now a matter of history that in May, 1884, the American Medical Association met in this capital and passed a resolution inviting the Congress to honor America by holding its next session in the United States. At the meeting in Copenhagen, when the question came up for disposition, Washington was selected. The committee, having borne the invitation and secured its acceptance, returned home and immediately began the work of organization. Shortly before the meeting of the American Medical Association in New Orleans in May, 1885, the preliminary organization was completed. But it transpired that this committee was unable to form an organization satisfactory to the majority of the members of the Association, and after some discussion a resolution was adopted which authorized the appointment of additional members of the committee so as to include, in accordance with our American system of representation, one member from each State and Territory, and to these were added one representative from the Army, the Navy, and the Marine Hospital Corps. The enlarged committee met in Chicago, and a majority of the first committee was present and acted harmoniously with the new committee. In a short time, however, the members of the original committee withdrew and the management was thus deprived of their valued services. The committee had to contend against more than the ordinary difficulties attending so great an undertaking. The time was too short to speak adequately of the multifarious labors attached to the office of the Secretary-General, but he had to report that at the present moment there remained no unfinished business on the Secretary's table. The work of organization was now complete, and he submitted the programme and the volume of abstracts.

In regard to the programme, he stated that the rule requiring titles and abstracts of papers to be read to be in the hands of the Secretary-General before the 30th of April, had not in a single instance been complied with. Owing to this delay, the work of publication had been done in a hasty manner, and of necessity at the expense of many errors.

The contract for printing the volumes of *Transactions* has been let, and the work will be done with as much dispatch as possible.

Dr. A. Y. P. Garnett, of Washington, Chairman of the Committe of Arrangements, then announced

THE SOCIAL PROGRAMME

of the Congress.

Monday evening, there would be a conversazione at the United State Pension Building.

On Tuesday, the President of the United States will hold an informal reception at the Executive Mansion, from 8 to 9 P.M., after which the members will proceed to visit the Corcoran Art Gallery.

On Wednesday afternoon, from 4 to 6, the Hon. Josiah Dent will give a lawn party, to be attended only by those who receive cards of invitation.

On Thursday there will be a reception and banquet at the United States Pension Building, from 8 to 11, at which it is hoped that the President of the United States and his Cabinet will be present.

On Friday, the Secretary of the Navy, Mr. Whitney, will give a reception at Grass Lands, his country residence.

On Saturday, there will be an excursion to Mount Vernon for the foreign members and their families only, the United States steamer "Dispatch" having been kindly granted by the Secretary of the Navy for this purpose. In the afternoon, an excursion train will start for Niagara Falls and Watkin's Glen, also for the foreign members and their families, who will be conveyed free of charge. American members may also attend at the excursion rate.

In conclusion, Dr. Garnett remarked that it was a

source of profound regret and embarrassment to the Committee that the month of September had been chosen as the time of meeting, and it was their painful duty to explain to the visiting members that they had come to a city literally and almost entirely deserted of its inhabitants, who were thus prevented from displaying the hospitality for which they are justly noted.

THE SECRETARY OF STATE'S ADDRESS OF WELCOME.

THE PRESIDENT, DR. DAVIS, then introduced to the Congress the Hon. Thomas F. Bayard, Secretary of State, who welcomed the Congress in the following address:

"*Gentlemen of the International Medical Congress:* The pleasing duty has been assigned to me of giving expression, in the name of my fellow-countrymen, to the gratification felt by us all that you should have selected this Capital to be the scene of your Ninth Congress, and cordially to bid you welcome.

"The world is becoming better acquainted, social assimilation has progressed, small provinces and minor kingdoms are federalizing into great empires, international intimacy suffers less obstruction, the broad and powerful current of literature is silently wearing away the banks of geographical prejudice, and a spirit of a common brotherhood, of mutuality and independence is expanding itself irresistibly over the barriers of mountain and sea, and these new and beneficent conditions give promise that the word 'stranger' shall soon be obliterated from the vocabulary of civilization.

"You gentlemen will not, I hope, feel—and I am sure you will not be considered by us—as strangers in the United States; for not only has the fame of many of your number—whom to name might seem invidious—long since surpassed the limits of your own lands and been recorded in the world's annals of scientific attainment, but I take leave to say that here especially will your claims for public respect and grateful acknowledgment due to your enlightened services find prompt and hearty allowance by the populations who dwell amid the blessings of civil and religious liberty beneath the broad banner of these United States.

"If letters be a republic, science is surely a democracy, whose domain is penetrated and traversed by no royal road, but is open on all sides and equally to all, who with humility and intelligence shall watch and wait for light as it is gradually disclosed by divine Providence for the amelioration of mankind.

"In this democratic republic the brotherhood of science can best realize its universality; for here you will find institutions for the promotion of science in every department—and in none more conspicuously than in that of medicine and surgery—the most important of which are the voluntary gifts of private citizens, men who, in the great majority of cases, were painfully limited in their associations with science and letters, who began life at the lowest round of fortune's ladder; but, thanks to the noble equities of our political system, rose without 'invidious bar' to the highest level of material success and public usefulness.

"To the public spirit and benevolence of such individuals is due the endowment, on a scale that princes may envy, but have never surpassed, of schools of science, colleges, and universities, open for the intellectual training and advancement of all who desire to share and are competent to receive such benefits.

"Your Congress is held, gentlemen, in the year of the first century of our national existence, and what has been here accomplished in the line of scientific education and equipment owes comparatively little to official or governmental assistance. To no system of prescriptive privilege, but to individual energy, enterprise, and generosity, we owe what, under God, we now possess of such things, and non-interference by the Government has proved a promotion and not a hindrance in our advancement. Busy in every department of industrial pursuit, engrossed with diversified occupations, and hurrying with a breathless energy that has left its traces upon the physiognomy of our people, yet, believe me, we are not deaf to the calls of humanity nor lacking in appreciation and grateful respect for the votaries of science.

"We welcome this Congress as guardians of the sanitations of the nations. In your profession we recognize the noblest school of human usefulness, and in the progress of the development of the laws of cure, the mitigation of suffering, the prolongation of human existence, and the efforts to discover the true principles of conditions by which life can be made 'worth living,' we have learned to appreciate our debt to those whose highest reward is the 'still small voice of gratitude' and consciousness of benefaction to the human race. Gentlemen, I confidently promise your convention a worthy audience—not alone the members of your profession here assembled nor the limited number whom this building can contain—but that vaster audience to whom, upon the wings of electrical force, your message will be daily borne far and wide to the listening ear of more than sixty millions of American citizens.

"Sure am I that your message will be worthy and equally that your thoughtful deliverances will be welcomed by a continent.

"The close relations of mankind which modern invention has induced has been necessarily accompanied by an increased dissemination of disease and the need is obvious of frequent international conference, that in the grand sweep of scientific observation new discoveries in the healing art may be promptly tested and applied in counteraction.

"Forgive me if, as one of the great army of patients, I humbly petition the profession that in your deliberations Nature may be allowed a hearing when remedies are proposed; that her *vis medicatrix* may not be omitted in computing the forces of cure, and that Science may be restricted as often as possible to sounding the alarm for nature to hasten, as she surely will, if permitted, to the defence of the point assailed.

"My duty is very simple, and I fear I have already overstepped its limit, for there was indeed little more for me to say than to repeat the words of an ancient dame whose cottage was close by the battlefield of Waterloo, and, being somewhat deaf, and hearing the sound of the artillery when the famous 'pounding' was hardest, thought she heard some one knocking at her door, and simply said: 'Come in.' This may seem an unscientific illustration of auscultation and percussion, but you need not make half the noise of Wellington or Bonaparte, and I can assure you the American

people will hear you and heartily say to you, as I do for them, 'Come in.'"

RESPONSES BY FOREIGN DELEGATES.

Inspector-General WILLIAM H. LLOYD, R. N., returned thanks on behalf the medical profession of Great Britain and Ireland, as represented by his professional brethren present, for the warm and eloquent welcome to which they had listened from the Secretary of State. He expressed thanks and appreciation of the kind and cordial welcome received from the Congress, and for the honor conferred by the presence and approval of the high officers of State of this truly great country.

DR. LEON LE FORT, of Paris, said he appeared in the name of his countrymen to express their thanks for this welcome. They had crossed the Atlantic to bring to their American colleagues an expression of their sympathy. The reception accorded had already proven that the sympathy was reciprocated. In designating Washington for the Congress the medical profession of Europe desired to affirm the high esteem in which American physicians are held.

DR. P. G. UNNA, of Hamburg, returned thanks on behalf of his German colleagues for the very friendly words with which they had been welcomed. The German physicians who had come to the United States had been most handsomely received. Not only had they found in all parts of the country men educated in German colleges in all the branches of medical science, but they had learned with pride that here German science was appreciated, and that here it had gathered a rich harvest. He begged to convey the assurance that the German members of the Congress would do their best to make the meeting a success.

SENATOR M. SEMMOLA, of Naples, said he was happy to have the honor of replying in the name of Italy and of bringing the salutation of his young and great nation, which regards with profound interest the marvellous growth of this edifice of independence—the United States. He believed international congresses to be among the best means of binding peoples together in liberty, equality, and fraternity, and he flattered himself that this Congress would be a striking example of the invincible power of humanity, marching—science and liberty allied—toward that condition of social peace which was inspired in the United States and would always be a shining mirror of the patriotism of this great people.

DR. CHAS. REYHER, of St. Petersburg, said he would hardly dare to speak were it not made his duty to do so. He would not be understood if he spoke in Russian, and his familiarity with English was very limited. He and all who came with him expected to see and learn much, but they had seen and learned far more than they had hoped. He expressed his hearty thanks for the welcome.

Dr. N. S. DAVIS then delivered

THE PRESIDENTIAL ADDRESS.

Gentlemen and members of this Congress: It is my first duty on this occasion to remind you that death has removed from among us one to whom, more than to any other, we are indebted for the privilege of having the Ninth International Medical Congress in America, one whose urbanity, erudition, valuable contributions to medical literature, and eminence as a teacher caused him not only to be universally regarded the most influential leader in all the preparatory works, but also the one unanimously designated to preside over your deliberations on this occasion. That one was the late Professor Austin Flint, of New York, who was taken suddenly from his earthly labors early in 1886, before the preparations for this Congress had been half completed.

The true nobility of his private and professional character, his ability as a teacher, and the number and value of his contributions to the art and science of medicine had caused him to be known and esteemed in all countries. And, as you well remember, that, while the shock of his death was fresh upon us, his loss seemed well-nigh irreparable. But, though he has taken his departure, ripe in years and full of honors, yet the influence of his excellent example and of his contributions to medical science remain, and will continue to exert a beneficent influence through all the generations to come.

With a full consciousness of my own deficiencies, and still with a heart overflowing with gratitude, I thank you for the honor you have bestowed in selecting me to preside over this great and learned assembly. It is an honor that I appreciate as second to no other of a temporal nature because it has been bestowed, neither by conquest nor hereditary influence, nor yet by partisan strife, but by the free expression of your own choice.

Addressing myself now more directly to those here assembled, who have left homes and loved ones in other lands and encountered the fatigue and danger of travelling by sea and by land, in the name of the Medical Profession of this country I welcome you, not only to this beautiful city and the hospitality of its citizens, as has been so admirably done already by the honorable representative of the Government, who has just taken his seat, but I cordially welcome you to the open arms and warm hearts of the medical men of this *whole country*, in whose name you were invited here three years since, and whose representatives are now here, side by side with you, gathered from the East, the West, the North, the South, as well as from the rugged mountains and fertile valleys of the Centre, to make good the promise implied by that invitation.

If they do not cause you to feel at home and happy, not only in the social circles and halls devoted to the advancement of science, literature, and art in this city of our Nation's pride, but wherever you may choose to roam, from the rocky coast of New England on the Atlantic to the Golden Gate of the Pacific, it will be from no want of earnest disposition to do so.

He then urged that no other one influence operative in human society during the present century has done as much to develop and diffuse medical knowledge, to stimulate its practical and successful application, both in sanitary measures for preventing disease and in the direct alleviation of suffering at the bedside, and in unifying and ennobling the profession itself, as has been accomplished by the aggregate medical society organizations of the world. Yet their capacity for conferring other and perhaps still greater benefits, under proper management, will have become manifest in the near future. And that he might accomplish the chief object of this address, he asked indulgence while he indicated some of the more important additional benefits in ad-

vancing medical science and saving human life through the instrumentality of our medical society organizations, and the methods by which they may be accomplished.

These latter, briefly stated, consisted in the addition to every permanent general medical society, of two standing committees; one, to which should be referred for critical examination every communication claiming to embody a new discovery in either the Science or Art of Medicine; and the other should be charged with the work of devising such lines of investigation for developing additional knowledge as require the coöperation of different individuals, and perhaps societies, and of superintending their efficient execution until crowned with success.

It has been tersely and correctly stated that associated action constitutes the characteristic and predominating power of the age in which we live. It is by associated action that education in its broadest sense, religion, and civilization have been more rapidly diffused among the masses of mankind during the present century, than during any other period of the world's history. It is by the association of capital, wielded by the associated intellects of the nineteenth century, that the highways of commerce have been opened over the valleys, through the mountains, across the deserts, and on the oceans, over some of which the material productions of the nations are borne by the resistless power of steam, and along others the products of mental action are moved with the speed of electric currents, until both time and space are so far nullified that the most distant nations have become neighbors, and the inhabitants hold daily converse with each other from opposite sides of the globe. Indeed, it is only by means of such of these highways as have been constructed within the memory of him who addresses you, that you have been gathered in this hall from the four quarters of the earth, and through which an account of your doings may be daily transmitted to your most distant homes.

In concluding he said, I congratulate you on the fact that the profession you represent has taken the lead of all other professions or classes of men, in rendering available these grand material achievements of the age for cultivating fraternal relations, developing and interchanging knowledge, and planning concerted action for rendering human life everywhere healthier, happier, and of longer duration.

This is the ninth grand International Congress in regular series within little more than two decades, and let us hope that all its work will not only be done in harmony and good order, but with such results as will add much to the aggregate of human happiness through all the coming generations.

Without trespassing further on your patience, I must ask your forbearance with my own imperfect qualifications, and your generous assistance in the discharge of the responsible duties you have devolved upon me.

The Congress then adjourned to meet in Sections at 3 P. M.

SECTIONS.

General Medicine.

The Section was called to order at three o'clock in the Congregational Church, by THE PRESIDENT, A. B. ARNOLD, M.D., of Baltimore, who, after briefly announcing the method to be pursued in the working of the Section, said that the occasion which afforded him the privilege of addressing the representative men of our profession seems not inappropriate to cast a retrospective glance at the methods which exert a dominant influence on the medical practice of the present day. An inquiry concerning the extent and the value of our therapeutical resources under changing circumstances, even if very imperfectly carried out, will not be deemed wholly uninteresting to the reflecting physician. He then referred to the lack of confidence displayed by some on the one hand in the reception of advanced methods of investigation or treatment, and the too hurried adoption of them by others. Candid and competent criticism is evidently the only safeguard against the overweening confidence in favor of therapeutical measures, as well as the best corrective of irrational scepticism.

Although we would naturally expect unanimity of opinion in regard to the treatment of febrile affections which are self-limited, or, at least, display a tendency toward recovery: yet he thought he did not exaggerate when he asserted that there is an English, a French, a German, an Italian, a Spanish, and an American method of treating fever. It may be safely said, however, that the rate of mortality of fever has steadily diminished during the last four decades.

The therapeutics of typhoid fever was then made the topic of special consideration. Although the most beneficial results have been reported from the artificial depression of the accelerated pulse and respiration, yet the essayist did not think the methods have been demonstrated as curative in their results. Hyperpyrexia is an unquestioned danger in fever, and the methods for overcoming it were briefly reviewed by the essayist. We are now more than at any previous time able to meet the causal indications of the disease in our treatment, and we know at the same time more of the method in which our therapeutic measures attain their effects. Hydrotherapy, for example, has its effect through the vasomotor nerves. Nature often cures disease, and a knowledge of her methods of so doing enables us the more scientifically to supplement her efforts in that direction.

In conclusion, he remarked that it is hardly conceivable that medical science will ever attain that degree of perfection which would render it competent to formulate a system of practice that would leave little to the discretion of the physician. A certain independence of action will always be unconsciously exercised. Medical talent in the hands of the brightest ornaments of the profession often assumes a character akin to the inspiration of genius. The display of diagnostic acumen, the mastery of difficulties and perplexities, and the promptness of decision in the presence of urgent realities, constitute accomplishments and performances which rival the brilliant achievements of co-workers in other branches of our profession.

DR. YGNACIO ALVARADO, of Mexico, then read a paper entitled

SOME SUGGESTIONS ON THE PATHOGENESIS OF YELLOW FEVER.

It would appear, he said, pretty well established that the symptoms of yellow fever are due to the presence and action of microbes. It is also a striking fact not altogether new, that there is a strong analogy existing

between the symptoms of this disease and those produced by lactic acid poisoning, on the one hand, and phosphoric acid on the other. To determine the reality of the poisoning by these agents in this disease is extremely difficult, and would require an extraordinary degree of knowledge and skill in chemical manipulations. Assuming, however, that the microbe to whose action is due the manifestations of the disease, by its action on the sugar which it finds in the blood, and more especially in the liver, produces a lactic acid fermentation, that this lactic acid, combining with the phosphate of soda in the organism, occasions the setting free of phosphoric acid, we have the phenomena which occur pretty satisfactorily explained. That the formation of lactic acid occurs is indicated, he held, by the pathological lesions which occur in the disease.

He then reviewed briefly the more prominent lesions of yellow fever as found upon autopsy, consisting for the most part in rapid fatty degeneration of the liver, the coats of the stomach, extending well out along its vessels, sometimes resulting in hemorrhage, the kidneys, and brain, in all of which he traced the analogy to phosphoric acid poisoning. Poisoning by this agent, he added, causes the blood to become acid, just as it is found in yellow fever. The symptoms of the disease were then reviewed more fully, and the address closed with a short *résumé* of the treatment of the disease, including a number of experiments.

DR. WALTER P. GEIKE, of Ontario, Canada, then read a paper on

PNEUMONIA AS MET WITH IN VARIOUS PARTS OF THE DOMINION OF CANADA.

The first point he endeavored to establish was the frequence with which the disease occurred in various parts of the Dominion. In the furthest western portion, especially in the Westminster district, acute primary pneumonia is comparatively rare. It is much more frequently a secondary disease, complicating for the most part typhoid fever. Coming a little further eastward, it is said not to be common. Is this not, he inquired, because the settlers are as yet few in this region? In this part, too malaria, which is so important a factor in its influence upon all diseases, but especially this one, is not found. It occurs in the acute form in scattered settlements, assuming the more protracted form in the cities and in rapidly growing settlements. In the southern parts of Ontario, malaria is a frequent complication of the disease. The disease also tends to assume a low form. In Toronto, for instance, where malaria frequently complicates the disease, a low form is frequently encountered, which renders the prognosis much more grave. In many cases the disease seemed to be contagious, or perhaps more properly, the specific fever accompanying the disease appeared to be contagious. That the adynamic form of the disease should supersede in frequency the more acute form, is a striking fact. He admitted that in many cases the exhausted condition of the system from alcoholic or other excesses was responsible for this apparent inconsistency. But he thought bad drainage had more to do with the production of the disease than any other factor.

Coming to the province of Quebec, we learn that in Montreal pneumonia is frequent and is generally acute in form, unless when it affects enfeebled persons or those of intemperate habits. The very low form, thought by some to be contagious, is said to be very rare in Montreal, and its presence there as an epidemic is strongly questioned, as throughout the great Northwest malaria is not met with. There is little doubt that to the absence of malaria as well as to the similarity of climate is due the fact that pneumonia presents so many of the same features in these widely separated districts, in Quebec on the one hand, and in the Northwest on the other. The cases of pneumonia seen in New Brunswick, in Nova Scotia, in Newfoundland, and in Prince Edward's Land are the same. In conclusion, he said that it would be entirely too wide a field for the present occasion to introduce the question whether the disease is a local one or is the local expression of a specific infection.

Dr. Geike, in conclusion, stated that he did not consider pneumonia more frequent in malarial districts than elsewhere but when complicated by malaria the disease presents a much altered character and a higher mortality.

The Section then adjourned.

GENERAL SURGERY.

The Section met in the Congregational Church and was called to order at 3 P.M. by the President DR. W. T. BRIGGS, of Nashville, Tenn., who in a brief address of welcome opened the Section for work.

DR. CHARLES T. PARKES, of Chicago, presented a paper on

GUNSHOT WOUNDS OF THE ABDOMEN.

No subject has interested surgeons, he said, more than the treatment of penetrating wounds of the abdomen. In 1885 the whole number of recorded cases of operation for gunshot wounds of the intestine was but six. Since 1885, thirty-eight cases have been recorded with eleven recoveries, and surgical interference in appropriate cases is now the generally accepted view. The condition and appearances of the external wound give some indication as to presence or absence of penetration. A single wound of the abdomen affords a hope that the penetration has not taken place, but it is only a hope. Even the presence of a wound of entrance and exit does not positively indicate injury of the viscera. If there is a tract of tenderness continuous from the wound of entrance some distance, it is fair to infer that penetration does not exist. A large bullet-hole indicates penetration. When in doubt the wound of entrance should be enlarged. In this way the presence or absence of penetration can be determined, and with the usual precautions this does not increase the dangers.

In diagnosis much value cannot be attached to the subjective sensations. The unusually rapid appearance of tympanites in a region ordinarily dull, would indicate escape of gas into the abdominal cavity. Localized dulness in the region of the wound or in the dependent portion of the abdomen would indicate hemorrhage. The presence of blood in the urine indicates wound of the kidney, bladder, or ureter. Shock cannot be relied upon, but when present the probability of such injury is very great. The rare phenomenon of feces in the wound is a positive sign of perforation. The presence of persistent nausea and vomiting

also points to injury of the viscera. The absence of pulsation in one femoral vein indicates injury of the iliac vessel. Two cases were then reported.

In the treatment of gunshot injuries of the abdomen, incision in the median line is better in the majority of cases. There are exceptional cases in which enlargement of the original wound answers the purpose. The continuous suture answers every purpose, and as it can be inserted more rapidly than the Lembert, it is preferable. Silk is preferable to catgut in making the sutures. Where resection is required, two methods of procedure may be adopted. In cases where the mesenteric border cannot be saved, section should be made through the healthy bowel, and a triangular portion of the mesentery also removed. The two portions of the bowel are then brought together and secured with sutures, the first suture being introduced at the junction of the mesentery and intestine. In no case had he found it necessary to use more than one row of sutures. All raw surfaces should be covered with peritoneum. The second method is applicable in cases where the mesenteric border is not injured. In these cases the section does not involve the mesenteric border of the intestine. The injured portion is alone removed and the edges of the healthy bowel brought together with the continuous suture. Where the omentum is injured the hemorrhage is often severe, requiring the removal of a large portion of the structure. All slits and lacerations in the omentum should be closed by sutures. In perforation of the stomach there is no difficulty in closing the wound after it is found. Where there is no complication wounds of the stomach usually heal satisfactorily. In gunshot wounds of the liver the surfaces should be brought together by deep sutures. The same procedure may be employed in the case of the spleen, but where this organ is badly lacerated extirpation is indicated. Perforating wounds of the kidney call for extirpation. Perforation of the liver, spleen, or kidneys with a similar injury of the small intestine greatly increases the gravity of the case, and such cases will usually end fatally. Wounds of the bladder call for suture.

Special stress was laid on the necessity of seeking out all wounded bloodvessels, thus preventing the danger of primary or secondary hemorrhage. There should be a careful search made for all wounds of the intestine, the bowel being examined in a systematic manner. Tight sutures should be avoided, for these will lead to sloughing and extravasation. If the peritoneal surfaces are laid in contact and kept there for a few hours, adhesions will take place.

Dr. N. Senn, of Milwaukee, then read

AN EXPERIMENTAL CONTRIBUTION TO INTESTINAL SURGERY, WITH SPECIAL REFERENCE TO THE TREATMENT OF INTESTINAL OBSTRUCTION.

The indications in the treatment of intestinal obstruction are to remove or render harmless the cause of the obstruction, and the immediate restoration of the continuity of the intestinal canal. Where the cause cannot be removed, it is to be rendered harmless by forming an anastomosis between the portion of bowel below and that above. One hundred and fifty operations were performed on animals. The principal forms of intestinal obstruction were produced artificially, and the attempt was made to devise some new operation whereby the obstruction may be relieved when the removal of the cause is not possible. The length of time required in the performance of most of the present operations is their great contraindication. By simplifying the method of operation, the author had been able to lessen the time required. To prevent extravasation during the progress of the operation, the author had employed a narrow rubber band tied around the intestine with sufficient force to occlude it. He had never observed any injurious effects following the use of elastic compression.

The study was first directed to simple *stenosis*, which was produced by cutting out a semilunar portion of the bowel. (*a*) Traumatic stenosis from this cause becomes a source of danger from obstruction or perforation where the lumen of the bowel is reduced more than one-half. Where excision of the bowel is required for injury not more than one-half should be taken away. If more is required, circular excision should be resorted to. Longitudinal suturing of wounds on the mesenteric side of the intestine should never be practised, as such a procedure is invariably followed by gangrene and perforation, through interference with the blood supply of the portion of bowel corresponding to the mesenteric defect. (*b*) In circular constriction of the bowel, the immediate cause of gangrene of a loop of intestine is obstruction to the venous circulation, and takes place first at a point most remote from the cause of the obstruction.

Flexion (*a*) produced by partial enterectomy and transverse suturing of the wound. On the convex surface of the bowel, a defect an inch in width can be closed by transverse suturing without causing obstruction by flexion. In such cases the stenosis is subsequently corrected by a compensating bulging of the mesenteric side of the bowel. Closing a wound of such dimensions on the mesenteric side of the bowel by transverse suture, may give rise to intestinal obstruction by flexion, and to gangrene and perforation by seriously impairing the blood supply to and venous return from the portion of bowel corresponding with the mesenteric defect. (*b*) Flexion caused by inflammatory and other extrinsic causes, gives rise to intestinal obstruction only in case the functional capacity of the flexed portion of the bowel has been diminished or suspended by the causes which have produced the flexion, or by subsequent causes independently of the flexion.

Volvulus, as in flexion, gives rise to symptoms of obstruction when the causes which have given rise to a rotation upon its axis of a loop of bowel, have at the same time produced an impairment or suspension of peristalsis in the portion of bowel which constitutes the volvulus, or when a diminution or suspension of peristalsis follows in consequence of the rotation.

Invagination. Accumulation of intestinal contents above the seat of invagination, is one of the most important factors in preventing spontaneous disinvagination and in inducing gangrene of the intussuscipiens. Spontaneous reduction is not more frequent in ascending than in descending invagination. The immediate cause of gangrene is obstruction to the return of venous blood by constriction at the neck of the intussuscipiens. Ileo-cæcal invagination when recent can frequently be reduced by distentions of the colon and rectum with water, but this method of reduction must be practised with great care and gentleness, as over-distention of the colon and rectum is productive of multiple longi-

tudinal lacerations of the peritoneal coat, an accident which is followed by the gravest consequences. The competency of the ileo-cæcal valve can only be overcome by over-distention of the cæcum, and is effected by a mechanical separation of the margins of the valve, consequently, it is imprudent to attempt treatment of intestinal obstruction beyond the ileo-cæcal valve by injections per rectum.

In a study of the effects of *enterectomy*, it was found that in dogs, resection of more than six feet of the small intestine was uniformly fatal, the cause usually being the immediate effects of the trauma. Resection of more than our feet is incompatible with normal digestion, absorption, and nutrition, and often results in death from marasmus. In cases of extensive intestinal resection, the remaining portion of the intestinal tract undergoes compensatory hypertrophy.

It was also found that *physiological exclusion* of an extensive portion of the intestinal tract, does not impair digestion, absorption, and nutrition, as seriously as the removal of a similar portion by resection. Fecal accumulation does not take place in the excluded portion of the intestinal canal, which undergoes atrophy.

Objection was made to the various forms of suture used in *circular enterorrhaphy* for three reasons: first, the time required for their insertion; second, the danger of puncturing the bowel; and third, the interference with nutrition which they cause. The author recommends a modification of Jobert's invagination suture by lining the intussusceptum with a thin flexible rubber ring, and the substitution of catgut for silk sutures is preferable to Czerny-Lembert sutures.

The line of suturing, or neck of intussuscipiens should be covered by a flap, or graft of omentum in all cases of circular resection, as this procedure furnishes an additional protection against perforation. In circular enterorrhaphy continuity of the peritoneal surface should be secured where the mesentery is detached by uniting the peritoneum with a fine catgut suture before the bowel is united, as this modification of the ordinary method furnishes better security against perforation on the mesenteric side.

Intestinal anastomosis. The formation of a fistulous communication between the bowel above and below the seat of obstruction should take the place of resection and circular enterorrhaphy in all cases where it is impossible, or impracticable to remove the cause of obstruction, or where the pathological conditions which have given rise to the obstruction do not constitute an intrinsic source of danger. Gastro-enterostomy and jejuno-ileostomy should always be made by approximation with partially or completely decalcified perforated bone plates.

In making an intestinal anastomosis for obstructions in the cæcum, or colon, the communication above and below the seat of obstruction can be established by apposition with decalcified perforated bone plates, or by lateral implantation of the ileum into the colon or rectum. An ileo-colostomy, or ileo-rectostomy by approximation with decalcified perforated bone plates or lateral implantation, should be done in all cases of irreducible ileo-cæcal invaginations, where the local signs do not indicate the existence or occurrence of gangrene and perforation. In all cases of threatened gangrene and perforation, the invaginated portion should be excised, both ends of the bowel closed, and the continuity of the intestinal canal restored by making an ileo-colostomy by approximation with perforated decalcified bone plates, or by lateral implantation. The restoration of the continuity of the intestinal canal by perforated approximation plates or lateral implantation, should be resorted to in all cases where circular enterorrhaphy is impossible, on account of the difference in the size of the lumina of the two ends of the bowel.

In cases of multiple gunshot wounds of the intestines involving the lateral or convex side of the bowel, the formation of intestinal anastomosis by perforated decalcified bone plates should be preferred to suturing, as this procedure is equally, if not more safe, and requires less time.

Adhesion experiments. Definitive healing of an intestinal wound is only completed after the formation of a network of new vessels in the product of tissue proliferation from the approximated serous surfaces. Under favorable circumstances, quite firm adhesions are formed between the peritoneal surfaces within six to twelve hours, which effectually resist the pressure from within outward. Scarification of the peritoneum at the seat of approximation hastens the formation of adhesions and the definitive healing of intestinal wounds. Omental grafts, from one to two inches in width, and sufficiently long to encircle the bowel completely, retain their vitality, become firmly adherent in from twelve to eighteen hours, and are freely supplied with bloodvessels in from twenty-four to forty-eight hours. Omental transplantation, or omental grafting, should be done in every circular resection, or suturing of large intestinal wounds, as this procedure favors the healing of the visceral wound, and furnishes an additional protection against perforation.

Adjourned.

OBSTETRICS.

PROFESSOR DELASKIE MILLER, of Chicago, opened the Section meeting with an

INAUGURAL ADDRESS.

His chief duty, he said, was to extend a cordial greeting. More than sixty thousand physicians now in the practice of obstetrics in the United States, will accept the utterances of these meetings as the decision of the court of last appeal. Upon the subject of craniotomy, he remarked, "Under the new *régime* the interests of the living child will constitute a more important factor, and justly so, for in the ideal future the child shall be preserved by operations which shall not enhance the danger of the mother." With reference to the treatment of intrauterine pregnancy, he said: "The electric current may be directed through the ovum with the confident expectation of arresting its vitality without adding to the danger of the mother." On the puerperal state, he said: "Of first importance to insure success in obstetric practice is the adoption of a *régime* which shall render the puerperal woman aseptic. No argument is deemed necessary to establish this position."

The line of eminent men in our department of medicine is short when compared with that of the Orient, still in America we may present the names of obstetricians of past generations who would reflect credit on any age or part of the world. He then briefly referred to the labors of Bard, Dewees, Meigs, White, of Buffalo, Miller, of

Louisville, Wright, of Ohio, Hodge, James, Shippen, Francis, Channing, Gilman, and Elliott.

The following paper was forwarded by DR. J. BRAXTON HICKS, of London, and was read by proxy,

ON THE CONTRACTIONS OF THE UTERUS THROUGHOUT PREGNANCY, AND THEIR VALUE IN THE DIAGNOSIS OF PREGNANCY, BOTH NORMAL AND COMPLICATED.

Fifteen years ago he directed attention to the fact that during the whole of pregnancy the uterus contracts and relaxes, at intervals, usually varying from five to twenty minutes, and the object of this paper was to point out the practical application of the knowledge obtained by recognizing these intermittent contractions.

Up to the fourth month, it is better to employ external and internal palpation. Suppose that a single woman is brought to the physician, for amenorrhœa, of four or five months' duration, and as increased size is noticed by her friends, an easy opportunity is thus afforded to us to make a superficial examination: and thus, without implying any suspicion, we can ascertain whether there be any swelling in the uterine region, and if there be, whether it is permanently firm or of varying density. Should the latter be the case, then we have sufficient grounds to go further into the case, and proceed to internal examination.

There is a condition of the pregnant uterus, to which the author first called attention, wherein at about the fifth month, the uterus during the intervals is very flaccid, scarcely to be felt, except at one part, where a firm lump is to be felt, more like a tumor on one side; and this condition is very often associated with the death of the fœtus, which increases the deception, although it is true that in this condition of flaccidity the fœtus is more readily felt than when the uterus is firm. The diagnosis here is difficult, between simple pregnancy, pregnancy with tumor, and extrauterine fœtation until we feel the uterus contract, when the whole is resolved into a solid ball till relaxation again occurs. The more solid portion marks the position of the placenta.

In cases of pregnancy associated with fibroma, we are enabled, by watching these contractions of the uterus, to distinguish generally between the portion occupied by the pregnancy and that occupied by the tumor. But in cases in which the tumors are numerous and the pregnancy early, it is not so easy; sometimes it is impossible. The diagnosis between ovarian tumors alone, or in connection with pregnancy, is easy, being based upon the alteration in density of the tumor or tumors.

The diagnosis between extrauterine fœtation and normal pregnancy is more difficult, because our proof in the former case is of a negative character. If it be normal pregnancy suspected to be extrauterine, then the proof is more easy. Supposing we have a combination of the two, then a careful examination will, sooner or later, reveal which of the two is uterus.

In twin pregnancy, where sometimes one ovum is dead and small, or one complicated with hydramnios, we have difficulty in determining the nature of one, whether it be a separate tumor; but when we find, as the uterus contracts, the variable parts brought together into one spheroid, we may conclude that the whole is within the uterus; and palpation and the stethoscope will easily reveal the dual contents.

In case of overdistention of the uterus, as by hydramnios, we lose, to a large extent, these contractions, and there is, therefore, a difficulty in distinguishing between it and a large ovarian cyst, though, of course, we have other helps; and in cases of molar pregnancy of the solid kind, or where the ovum is dead and the uterus has become more resisting in consequence, we find often rigid contraction of its walls, lasting for days together.

Alteration of density, alleged in cases of soft fibromas of the uterus—never observed by the author—only interferes with the diagnosis between these cases and those of molar pregnancy and abortion, in which there is menorrhagia. The menorrhagia—continuous except in cases of extreme anæmia—and the rate of growth serve to differentiate soft uterine new formations from molar pregnancy and abortion.

Persistent contraction of the uterus is rare without some abnormal state of the ovum, by which it is sometimes caused; but it may be expected also to be detrimental to the vitality of the fœtus, interfering with its circulation.

Three cases were cited to illustrate the above propositions. In Case IV., of suspected extrauterine pregnancy, the author was asked to decide whether the fœtus in a woman, seven months advanced in pregnancy, was placed within or without the uterus. The size of the abdomen was in correspondence with that of normal pregnancy, and the existence of a fœtus was also without doubt. The abdomen was examined only externally at first, and was soft, with only the fœtus to be felt; but in a few minutes the fœtus was less and less felt, till the abdomen was occupied by a firm pyriform mass which could easily be decided to be the uterus in contraction. This was quite evident when the contraction passed off, leaving the abdomen as soft as before, and the fœtus easily made out, as at first.

Dr. Hicks concluded with the following *résumé*:

I. During the whole of pregnancy, the uterus contracts at intervals, varying much, but commonly from five to twenty minutes, remaining contracted for a variable time—from three to five minutes.

II. If we place our examining hand on the uterus at the time of contraction, the uterus will be firm, pyriform, and the fœtal parts not easily detected, in general. If we place our hand in a state of repose, or allow it to remain on till the firm condition has passed away, then the outline of the uterus is found indistinct, sometimes not to be felt at all; while the fœtal parts are more or less easily detected, and can often be pressed by the fingers into various positions.

III. By noticing these facts we are enabled with ease, in general, to decide as to the existence of normal pregnancy: to diagnosticate between this and various tumors, both uterine and abnormal pregnancies; between pregnancy and distention of the bladder, and other conditions easily recognized by the practitioner.

IV. These intermittent contractions have the physiological use of emptying the uterine veins and thus changing the highly carbonized blood for that more aërated.

V. From some observations he is inclined to think that there is some closely constant relationship between this highly carbonized blood-accumulation and the fœtal movements, and between the fœtal movements and uterine contraction.

VI. He can confidently commend to the profession this additional help in the diagnosis of pregnancy, one easily recognized and easily learned. In his own practice it has proved to be of the greatest service for many years.

PROFESSOR A. R. SIMPSON, of Edinburgh, expressed the indebtedness of obstetricians to the rhythmic contractions of the pregnant uterus and their value in the diagnosis of pregnancy. He always insisted on the importance of attending to the alternate hardening and softening of the uterus, especially during the early months when, as yet, the fœtus had not become so developed as to be recognizable to touch or auscultation, and in cases in which the ovum had become addled, or was undergoing degeneration. As regards the physiological effects of these contractions, he thought it important to note the results of them at the close of pregnancy and the commencement of labor. There had been discussion between Küneke and others as to whether the uterine sinuses remained distended with blood or not. The probability was, as indicated by Dr. Braxton Hicks, that during contraction the uterus became anæmic. In Braun's frozen sections one could see that the walls of a uterus caught in diastole had had its vessels filled, whilst in the uterus caught in systole, when the walls were contracted and thickened, the vessels were empty. During each contraction the blood expelled from the uterus would first distend the blood-vessels in the cervix uteri and the vaginal walls. As a consequence of the engorgement of the capillaries of these structures, there took place exudation, increased mucous secretion and the softening of the tissues generally which was sometimes called vital dilatation, and the full development of which was so important for enabling the practitioner to form a favorable prognosis in ordinary labor. The sign was of especial diagnostic value at the third month—after Hegar's sign has been elicited—on bimanual palpation.

DR. CHARPENTIER, of Paris, narrated the history of a case of pregnancy complicated by hydramnios, in which Braxton Hicks's sign had been of very great aid.

DR. A. F. A. KING, of Washington, said the only detracting circumstance applying to the method of diagnosis under consideration, is the impossibility of differentiating the intermittent contractions of pregnancy from those produced under manipulation, in case of foreign bodies, such as polypi, retained menses in the caverna uteri, the positive diagnosis of pregnancy during the first three months, being practically impossible.

DR. DUNCAN C. MACCALLUM, of Montreal, then read a paper on

VICARIOUS MENSTRUATION.

He stated that the possibility of hemorrhage taking place from some other part of the body than the uterus as the immediate result of the suppression of the menstrual function, had been admitted from an early period by medical authorities, and accepted as an established fact by the profession generally.

As there appears to exist a discrepancy of opinion regarding what really constitutes vicarious menstruation, he said it was of great importance for the proper understanding of the subject, that agreement should be arrived at on this point. If the term be held to include all cases of hemorrhage occurring at the menstrual epoch, the menses being absent, and no other possible cause for the hemorrhage being present, whether the phenomenon be repeated or not at one or more succeeding menstrual periods, the cases would be very numerous, and there are probably many physicians in active practice who have met with one or more examples.

Suppression of the menses is a condition which frequently engages the attention, and comes under the care of the practical physician, but it is seldom attended by hemorrhage. It would appear, therefore, that something must be superadded to the amenorrhœa—some condition of the vasomotor nerves, or of the vessels of the part from which the blood escapes.

He then gave the details of the four cases of vicarious hemorrhage which had come under his observation—two of hæmatemesis, one of hæmoptysis, and one of epistaxis, and concluded by saying: Each of these cases fulfils the three main conditions demanded to constitute what he conceived to be a case of vicarious menstruation, namely—(a) Absence of a flow of blood from the uterus at the menstrual epoch. (b) An eruption of blood from some other organ. (c) Absence of any cause for the ectopic hemorrhage, other than arrested menstruation. It fulfils in the relief of vascular tension one of the principal objects of the menstrual discharge. It is clearly a vicarious hemorrhage.

DRS. BARTLETT and NELSON narrated histories of cases of alleged vicarious hemorrhage.

PROFESSOR T. LAZAREWITCH, of St. Petersburg, then presented, through the Secretary, a

DESCRIPTION OF A NEW NORMAL FORCEPS.

Inspecting the child's head after each forceps operation, and sketching the impression, he found that when the impressions were made on the cheek bones they were at a distance from the protuberance of the temporal bones, equal to half of the arc of the blade.

The greater the surface on which the blades act, or, the more curved inward the blades are, the greater will be the expelling power. Dr. Lazarewitch's parallel forceps, whatever the size of the head, preserve the same grasping power which in other forceps diminishes in proportion to the size of the head. He has constructed a lock that prevents slipping, by preserving the same inclination of the blades, whatever the size of the head.

The lock is constructed with a tenon entering freely into the large mortise, made in each branch of the forceps, the tenon being fixed by a screw in one branch, which is retained at the desired distance from the other by a projection constructed on each side of the tenon. This lock permits mobility by turning each half of the forceps on the longitudinal and transverse axes.

The conoid form of his *normal* straight forceps enables the operator to extract the head without drawing out the blades, and to place the blades in any one of the diameters, transverse, oblique, or conjugate.

His description of the forceps is as follows:

Made of steel, nickel plated; 13½ inches long; the blades have some elasticity, their surfaces smooth and polished. At a distance of ¾ of an inch from the tips, the blade is 1⅔ inches wide, and from the point grows narrower, until it is about ½ of an inch at the neck. The fenestra—elongated oval—⅞ of an inch wide, and 3¾ inches long. The cephalic curve has a radius of

7¾ inches. The inner surface of the handle is 1 inch in width, and 3¾ inches in length. The tenon of the lock is ¾ of an inch wide, 2¾ inches long, and ½ of an inch thick. The mortise is $\frac{9}{16}$ of an inch long and is about ½ of an inch wide.

He has employed his straight forceps, with the parallel handles, several times in the low operation, nine times in the high operation, with perfect success; with the latest improvement, in two cases.

He has successfully applied his forceps in one case of breech presentation, without any injurious compression. In such cases the blades must be applied as far as possible upon the bistrochanteric and transverse diameters.

GYNECOLOGY.

The Section met in Masonic Temple at 3 P. M., the PRESIDENT, DR. H. O. MARCY, of Boston, in the Chair.

The proceedings were opened by a few fitting words of welcome on the part of the President, especial allusion being made to the part which Americans, and especially Marion Sims, had played in the development of this branch of medicine.

DR. NATHAN BOZEMAN, of New York, then read a paper upon

THE GRADUAL PREPARATORY TREATMENT OF THE COMPLICATIONS OF URINARY AND FECAL FISTULAS IN WOMEN,

including a special consideration of the treatment of pyelitis by a new method, and the prevention of the evils of incontinence of urine by a new system of drainage. He referred at length to his well-known method of preparatory treatment for operation upon fistulas of various kinds and various degrees of severity, exhibiting and explaining the appliances which he is in the habit of using for producing dilatation and removing adhesive bands. The great difficulty has been hitherto so to control the escape of urine that its annoying and injurious effects could be obviated. He believed that that question was now solved by the use of a combined dilator and urinal, consisting in a hollow metallic receptacle, perforated with a few holes upon its upper surface, and provided with a long rubber tube which projects from the vagina. This instrument may be considered as supplemental to or developed from the hard-rubber vaginal dilators and the soft-sponge bag dilators which he has been using for many years. This method of treatment has been recently extended by him to certain cases in which, in addition to an urethro-vaginal fistula, pyelitis had also developed. Several ingeniously constructed probes and catheters were shown, by means of which he had been able to explore the ureter even to the pelvis of the kidney, to complete a diagnosis of pyelitis, and, by irrigation of the diseased organ, to bring about great improvement in the patient's condition. The operative procedure for accomplishing this end he has termed kolpo-uretero-cystotomy. He summarized his views as follows:

1. That the importance of the complications of fistula in the female has not been sufficiently appreciated.

2. Kolpo-kleisis is an unjustifiable operation, and leads to cystitis, pyelitis, etc.

3. The combination of drainage with dilatation as here expounded is believed to be productive of most useful results.

4. Some form of drainage is suitable for every case in which a vesico-vaginal fistula exists.

5. For such cases drainage will prove a means of great relief.

6. It is believed that this method of operation will prove of great service in the treatment of pyelitis and some other renal diseases.

DR. GRAILY HEWITT, of London, in opening the discussion, made a graceful allusion to the pleasure he had experienced in being in America at this time, and generously gave full credit to American gynecologists for the work which they had done. He considered that Dr. Bozeman's paper marked a distinct advance in the treatment of urinary fistulas; and the suggested operation for pyelitis was directly in the line of conservative surgery, and an improvement upon nephrotomy or nephrectomy.

DR. ADDINELL HEWSON, of Philadelphia, referred to his satisfactory experience in the use of the author's method of dilatation in the preparatory treatment of fistulas. He had also derived great advantage from the injection of a current of carbonic acid gas highly charged with sulphuretted hydrogen (exactly the same treatment that is followed in Bergeon's method of treating pulmonary phthisis *per rectum*) into the vagina and bladder. The treatment was usually continued for twenty minutes at a time, and satisfactory dilatation resulted.

DR. WATHEN, of Louisville, read a paper upon

RAPID DILATATION OF THE CERVIX,

stating at the outset his predilection in favor of this operation by means of steel dilators, especially in the treatment of dysmenorrhœa and sterility. Tents of all kinds were believed to be more or less unsafe, and a two-bladed instrument was preferred to bougies or any other form of instrument for this purpose. The operation should always be done with the greatest regard to antisepsis, and in case he dilatation is to exceed three-quarters of an inch, general anæsthesia to a moderate degree should be first produced. The form of dilator which he used had parallel blades which were thickened at the tips, and enabled one to dilate as thoroughly at the os internum as at the os externum, the blades not giving or springing, and thus producing unequal dilatation, as is too apt to be the case with such instruments as Goodell's for example. He considered that this method of operation could be substituted for other means in almost every case in which dilatation is indicated.

DR. A. MARTIN, of Berlin, in opening the discussion, sketched the development of the idea of dilatation since it was first propounded by Simpson, forty years ago, and alluded to the great changes which had occurred to the operation during that period. He quite approved of the author's idea of making the dilatation ample at the os internum, if it were done at all. For himself, however, he did not see the necessity for doing the operation frequently. The womb could be explored after slight dilatation, perhaps with the finger, and the curette could then be used if the question were one of diagnosis as to the character of the endometrium. He sometimes had occasion to divide the cervix with a knife, after which the interior of the organ could be ex-

plored, and the wound then closed as in the ordinary Emmet operation.

DR. WEEKS, of Portland, Me., thought the operation contraindicated in cases in which there was faulty condition of the ovaries and tubes. It was not an operation which was devoid of danger. He had lost a patient who was seized with acute peritonitis on the fourth day after a second operation for dysmenorrhœa.

DR. REED, of Ohio, deprecated the general advocacy of this method of treatment.

DR. GOELET, of New York, thought the great end to be attained was to produce dilatation to a certain degree, and then retain it by the use of a stem pessary for a sufficient length of time.

DR. TRENHOLME, of Montreal, laid stress upon the statement that those cases were not suitable for operation in which there was either uterine congestion or any disease of the tubes or ovaries. The patient should be examined just after menstruation is ended, and if any of these conditions are found no operation should be done. After the operation he approved of the use of a curved stem.

DR. GLISAN, of Portland, Oregon, had always obtained satisfactory results from the operation, and without especial attention to antisepsis.

DR. REEVES JACKSON, of Chicago, deplored the frequency with which the operation is done. He thought it useless except for purposes of exploration.

DR. NOTT, of Texas, believed that the field for the proper performance of the operation was a limited one.

DR. BURNS, of Allegheny, Pa., preferred to dilate the uterus, in proper cases, with hard rubber stems, leaving them in for several days and securing proper drainage.

DR. BALLS-HEADLEY, of Melbourne, Australia, still found Sims's operation of posterior section satisfactory in cases of stenosis attended with dyspnœa. He could not understand the great enthusiasm in America upon the subject of rapid dilatation.

DR. HOFF, of Ohio, obtained satisfactory dilatation with tents made of the pith of the cornstalk and wrapped with absorbent cotton.

DR. MCBURNEY, of Detroit, found as the result of a great many measurements upon the cadaver, that dilatation was anatomically unnecessary in most cases, and believed that he accomplished the same result, namely, the relief of congestion, by the use of suitable vaginal applications.

DR. DORRANCE, of England, still followed Sims's plan of cutting the cervix from the os internum to the os externum, keeping the wound open by means of a piece of lint laid within it, in those cases which are ordinarily treated by dilatation. During gestation, if it be desired to dilate the cervix, he uses an aseptic sponge tent.

DR. ANDALE, of Pittsburg, had never seen any bad results from the operation. He preferred steel dilators to tents. He had often seen sterility relieved by the operation.

DR. SATTERLEE, of Kentucky, had never had occasion to perform the operation, believing that the same results could be obtained by vaginal applications of hot water.

DR. WATHEN, in concluding, stated that he did not hesitate to perform the operation in his office, in suitable cases. He did not accept Emmet's dictum, that there was no such thing as congestive dysmenorrhœa. If Emmet did not believe in the conditions for which the operation was required, he could not consistently do it, hence his opposition to it. He would do the operation only in cases in which equally good results could not be obtained by milder means.

DR. T. MORE-MADDEN, of Dublin, forwarded a paper entitled

ON THE CAUSES AND TREATMENT OF BARRENNESS,

which was read by the Secretary.

It presented, in tabular form, a statement of the causes of sterility in five hundred and twenty-eight of the cases of infecundity occurring in married women, within the childbearing period of life, that had come under his observation. The cases may be roughly divided into four classes, viz.: 1st. Those in which barrenness was occasioned by sexual impotency or some physical impediment in the passages from the vulvar orifice to the ovaria. 2d. Cases of true sterility, or conceptive incapacity from deficiency congenital or acquired, structural disease, arrested developments, supra-involution, etc., of the uterus or from analogous morbid conditions of its appendages. 3d. Cases of barrenness from constitutional causes. 4th. Cases in which the causes of infecundity were apparently moral rather than physical, such as sexual incongruity, etc.

The most frequent of these causes of sterility is stenosis of the cervical canal. And, as he believes that the operative treatment of such cases, simple as it is deemed by some, requires more consideration than it generally receives, and frequently proves worse than useless from the disregard of certain details and precautions which he considers essential, he ventured to recommend the adoption of a method of procedure and the use of instruments which he had found advantageous in the curative treatment of stenosis in three hundred and eighty cases of obstructive dysmenorrhœa and sterility traceable to this cause.

The essential features of the method of treatment now referred to are the separation by cutting and simultaneous forcible expansion of the affected parts, followed by dilatation during the period of cicatrization, so as to prevent their subsequent contraction, and thus to secure the permanent patency of the previously occluded passage. To obtain this result he employs three instruments, namely: a special form of uterine director, which can, generally speaking, be introduced into any cervical canal, however narrow, and along which a serrated, triangular-guarded knife is made to travel up through the os internum; and, thirdly, a uterine dilator of great power, by which any required degree of cervical expansion may be effectually secured and accurately gauged.

The influence of uterine flexions in the prevention of pregnancy and the treatment he adopts in cases of sterility dependent thereon were described. He then dwelt on the subject of conceptive incapacity from morbid conditions of the Fallopian tubes, as he regards stenosis, as well as occlusion of these ducts by vaginitis and its results, such as hydro- and pyosalpinx, as far more common causes of sterility than is generally recognized. Moreover, he also holds that such tubal diseases may, in many instances, be efficiently dwelt with without resort to the serious operative procedures—*i. e.*, the removal of the uterine appendages, which, by some

surgeons, are considered invariably necessary, and are by them so freely employed in such cases. Therefore, he referred at some length to those less heroic alternative measures, such as aspiration and catheterization of the Fallopian tubes, the feasibility and the successful results of which, in appropriate cases of this kind, he has demonstrated clinically.

Dr. Gordon, of Portland, Me., believed that sterility was not often due to stenosis of the canal. Other important causes were vaginismus, a diseased uterine mucous membrane, which was usually due primarily to a displacement of the uterus, and disease of the tubes and ovaries.

Dr. Reed, of Ohio, thought that Hodge as well as Graily Hewitt, deserved great credit for suggesting the treatment of these disorders by mechanical supports.

Dr. Graily Hewitt modestly admitted that he but took up Hodge's suggestion and applied it to anterior displacements, as Hodge had to posterior ones. Besides dilatation as a means for relieving sterility and dysmenorrhœa, the uterine canal should also be straightened, and both ends were often accomplished by the same means.

Dr. Smith, of Montreal, suggested that disease of the testicles must not be overlooked in the treatment of sterility.

Dr. Nelson, of Chicago, observed that the uterus must not only have no gross lesions, but its mucous membrane must also be susceptible of normal congestion in order to conception. Abuse of coitus was also believed to be a potent cause of sterility.

Therapeutics and Materia Medica.

The President, Dr. Traill Green, of Easton, opened the proceedings of the Section with a short address, dealing largely with the history of the study of this branch of medicine in the United States, and referring in laudation to Morgan and Kuhn, the first teachers of materia medica in America. He also spoke in complimentary terms of the recent works on therapeutics by American authors, more particularly those of Drs. George B. Wood, Stillé, Robley Dunglison, and H. C. Wood, and referred to the two dispensatories, printed in this country, as triumphs of medical authorship. He impressed upon his hearers the fact that the rational use of drugs rests upon a knowledge of their physiological action, and that for this reason experiments on the lower animals are necessary and of great value.

Dr. C. D. F. Phillips, of London, in reply, thanked Dr. Green for his kindness to all the members of the Section, and stated that Englishmen all owed much to the works of Stillé and the elder and younger Wood, each new edition of whose books was always welcomed in England.

The Section, after transaction of other business, adjourned to meet on Tuesday afternoon at 3 o'clock.

Diseases of Children.

The Section was called to order by The President, Dr. J. Lewis Smith.

Dr. Saint Germain, of Paris, forwarded a paper on

PREPUTIAL DILATATION AND IGNIPUNCTURE IN PLACE OF CIRCUMCISION AND TONSILLOTOMY,

which was read by the Secretary, and presented the following conclusions:

In view of the frequency of these two classes of cases, and of the satisfactory results obtained without risk to the patients, ought we not to consider the substitution of preputial dilatation and ignipuncture of the tonsils in the place of circumcision and tonsillotomy an appreciable surgical advance?

Dr. A. March, of Illinois, thought simple incision the more satisfactory and radical measure, and that there is but little danger from incision. We have trouble only about once in three hundred times.

Dr. Lewis A. Sayre, of New York, read a paper on the

DELETERIOUS RESULTS IN CHILDREN OF A NARROW PREPUCE AND PREPUTIAL ADHESIONS.

He partially reviewed the literature of the subject to establish his claim to having been the first to call attention to the significance of these cases. He recommended as little cutting as possible, just enough to permit of preputial retraction. He inserts a grooved director under the prepuce, and then cuts all contracted tissues, and no more, with a curved bistoury. If necessary, a slight cut may be made with scissors. He strongly objects to the general and unjustifiable mutilation of the prepuce. Enough should always be left to form an adequate covering for the glans. It is very common to mutilate the prepuce of small children for symptoms that do not justify operative interference. He reported a number of cases of reflex disturbance from constriction or adhesion of the prepuce, or the collection of smegma, showing the prompt relief afforded by circumcision and the removal of smegma.

Dr. De Forrest Willard, of Philadelphia, was glad Dr. Sayre had modified his former radical ideas as to the value of circumcision. He did not doubt that reflex symptoms result from preputial contraction, and he had seen many such cases. It is often that children have a slight agglutination of the prepuce and glans, and they require nothing but a stripping back of the prepuce and cleansing of the glans, which will, in many cases, take the place of all operative interference. Long prepuces are often mistaken for contracted ones, and a little care in stripping back will fully expose the glans. Care must be taken to avoid paraphimosis. In case of swollen glans it is well to make suitable intrapreputial injections for several days. In older children and adults there is less to be hoped for from dilatation, and circumcision is more often called for. He thinks the prepuce is only intended to cover and protect the glans during infancy and childhood.

Dr. Sayre thought the daily stretching and stripping back of the prepuce cruel and inhuman. Slight nicking is a simpler and better plan.

Dr. Lewis H. Sayre preferred always to operate in all cases having symptoms pointing to organic disease of the cord, thereby giving otherwise hopeless cases the benefit of every doubt. He cited the almost complete cure in this way of a case circumcised by him after having been diagnosticated by the leading neurologists of the country as a case of pseudo-hypertrophic paralysis.

Dr. Booker, of Baltimore, objected to Dr. Willard's "stripping plan," on the ground that it would lead to masturbation.

Dr. Willard thought masturbation would not be

induced if the prepuce is not tight, as one that slides back freely and easily causes no erethism.

DR. I. N. LOVE, of St. Louis, suggested that the majority of cases of preputial irritation called for the carrying out of the Mosaic law.

DR. GORDON, of Portland, Me., also favored the rabbinical procedure, so as to insure the daily stripping and washing, as mothers are not to be depended on to do this.

DR. P. R. FURBECK, of Gloversville, N. Y., related cases showing prompt and permanent relief from one complete dilatation. He did not favor repeated dilatation.

DR. J. LEWIS SMITH called attention to the causative relation between preputial and urethral stenosis, and collections of smegma, to inguinal hernia in children. Cases of hernia in children have been relieved by circumcision. The hernia is caused in these cases by straining efforts at micturition.

OPHTHALMOLOGY.

MONDAY, SEPTEMBER 5TH.

THE PRESIDENT, DR. J. J. CHISOLM, of Baltimore, in the chair.

DR. A. MOOREN, of Düsseldorf, Germany, read a paper on

EYE TROUBLES IN THEIR RELATION TO OCCIPITAL DISEASE.

He began by recalling to the minds of his hearers that the physiology of to-day places the centre of vision in the cortex of the occipital lobe, and that this localization was first pointed out by Huguenin, who by a section showed a defect in the cortex of these lobes in a case of optic atrophy with amaurosis of the left eye, existing from earliest childhood. He further referred to the experiments of Munck on this same subject as classical, and stated that this observer's conclusions were far-reaching and exact. Willhand formulates the results of his investigations thus, that the color centre is placed on the most exterior part of the occipital lobes, that beneath it we have the centre for acuteness of vision—the centre for the sense of space.

In the third layer there exists, next to Gratiot's visual radiations, the light centre—that is to say, the centre for the visual field. Destruction of the last layer, of course, destroys the functions of the other two, but it is equally evident that destruction of the others does not destroy the centre for the visual field. After describing the conditions of the optic nerve, as seen during the presence of lesions in these regions, he went on to state that though there are "neuropathic individuals who pretend to see from time to time under the symptoms of a scotoma scintillans by serious attacks of hemicrania, the objects half cut," that he had failed in every instance to discover "objectively in such patients any anomaly of this sort." Seguin and Cuschmann place the centre of optic perception in the cortex cuneatus and the first occipital convolution.

DR. CHISOLM, of Baltimore, exhibited a patient suffering from a tumor of the occipital lobes, which had entirely eroded the skull, so that the brain could be felt through the scalp. This growth was first noticed two years prior to the present date, about which time hearing was dulled in the left ear, while the sight of the right eye became impaired. At this time, however, he could still read clearly with the left eye. Five months since both of the nerves showed incipient atrophy, but nevertheless vision was good in the left eye. In the last two or three months both eyes have failed.

DR. LEARTUS CONNOR, of Detroit, then read a paper

ON THE USE OF HOT WATER IN THE TREATMENT OF EYE DISEASES.

He recommended the use of water as hot as could be borne, and stated that the temperature of hot water applications to the eye should never be less than 105° F. or more than 140° F. Temperature below 105° F. was absolutely injurious. The advantages of this treatment consisted in its cheapness, safety, and the fact that it can always be obtained. He believes that poultices should never be used to the eye for many reasons, and that the hot compress is not so good as the plain hot water application. He recommends also the immersion of the eye in hot water by the inversion of a small tumbler which will fit in such a manner as to prevent leakage over the face.

In the discussion, DR. THOMPSON, of Indianapolis, deprecated Dr. Connor's rejection of the "time-honored poultice," and praised very highly the use of slippery elm, sassafras, and chamomile poultices in many instances of inflammation. He also asserted that, in his experience, every case did not do so well with hot water as might be hoped from Dr. Connor's paper, and that in these instances cold water was of service. He thought the matter depended largely on idiosyncrasy.

The Section then adjourned.

TUESDAY SEPTEMBER 6TH.

GENERAL SESSION.

The second General Session of the Congress was called to order by THE PRESIDENT, DR. N. S. DAVIS, promptly at 10 o'clock.

DR. AUSTIN FLINT, of New York, delivered an address on

FEVER, ITS CAUSES, MECHANISM, AND RATIONAL TREATMENT.

(See p. 287.)

The address was listened to with general and unabated attention. At its close the President announced that it had been decided to postpone the address of Professor Semmola until Wednesday morning, in order to shorten the morning sessions and to avoid interfering with the work of the Sections, which were announced to convene at 11 A. M.

SECTIONS.

MEDICINE.

Owing to a scarcity of papers, the Section held no morning session, but assembled promptly at 3 P. M.

DR. JOSEPH KAPOSI, of Buda-Pesth, Hungary, read a paper on

THE PREVENTIVE POWER OF VACCINATION.

Is it true, he asked, that a less number of vaccinated individuals get smallpox than of unvaccinated? This is

difficult to answer, for to do so it would be necessary to separate the vaccinated from the unvaccinated in smallpox epidemics; and this is not possible. It is claimed, on the one hand, that the vaccinators cannot establish the truth of their claimed immunity. The anti-vaccinationists must rely upon small numbers of cases; and, for the most part, their observations have been among badly vaccinated individuals. This is, of course, no direct answer to the question. It is asserted that the unvaccinated suffer in larger numbers from smallpox than the vaccinated; but this is answered by the anti-vaccinationists by the statement that if this is the case, t is so because the unvaccinated are found among the poor, who are more exposed to all diseases, and who are more likely to succumb to diseases than the higher classes who are less exposed.

Further, it has been established that some diseases can be communicated by vaccination. The anti-vaccinationists therefore say that we conclude that vaccination is not only a useless procedure, but that it is positively dangerous. Such was the statement of the arguments against vaccination.

In the first place, are unvaccinated persons more subject to disease than are the vaccinated? If so, is this fact due to their lack of vaccination? This question could be readily answered if we knew the lethality of all diseases among the vaccinated and the unvaccinated, and if we could compare these statistics with the mortality of smallpox patients. Conclusions would, in other words, be possible, if we know in the case of each patient whether he had previously been vaccinated or not.

He had introduced this method of investigation into each of the nineteen hospitals of his district, and had met with considerable success, during the nine months in which it has been in operation, owing to the efficient coöperation of the gentlemen in charge of these institutions. The reports showed that of about 20,000 patients admitted in that time to these hospitals, 16,135 were vaccinated. Of these there died, from every cause, 1306. There were 2437 unvaccinated patients, of whom 321 died; showing, in the first instance, a mortality of about 8 per cent., in the latter 13 per cent. The mortality from all diseases is thus greater among unvaccinated than among vaccinated. But how is it in smallpox? The statistics of these hospitals showed that amongst the vaccinated patients the mortality of smallpox was 6.66 per cent.; while in the unvaccinated it was 49.68 per cent., or nearly half. It would not now be correct to assume that the relation of immunity conveyed was, therefore, so great as 800 per cent. Two factors must be considered as producing this result; in the first place, the vaccination; and, in the second, the difference of constitution on the part of the individual. As nearly as could be determined, difference of constitution was responsible for 50 or 60 per cent. of this difference, the rest being fairly attributable to the lack of vaccination. It is safe, therefore, to say that the unvaccinated are exposed to about five and a half times greater danger of death from smallpox than are the vaccinated.

The same series of observations show that among 19,738 non-smallpox patients, 2437 had previously been vaccinated, or 12.7 per cent. There were in that period in the hospitals 1113 cases of smallpox. Of these 1113 cases, in order to make the ratio the same as among non-smallpox cases, there should be 141 unvaccinated; but instead of this number, there were 465, or nearly 45 per cent.

Statisticians, in observing the mortality of vaccinated and unvaccinated cases, have confined their observations almost entirely to smallpox patients; but of what value is it simply to say that so many were vaccinated, while a certain other number were not vaccinated? In Buda-Pesth, a city of 20,000 inhabitants, the coroners have been required to report to the essayist whether or not each of the cases coming under their observation had or had not been vaccinated.

The results were even more striking than in the previous observations. The same proportions are found to exist in all periods of life.

In regard to the dangers of vaccination it is impossible to give a perfectly satisfactory answer, owing to the impossibility of determining in most cases whether or not diseases coming on after vaccination are in any way related to the vaccination. Reports were made to the essayist from the same sources in regard to the frequency of syphilis in vaccinated subjects; and, on the other hand, of the proportion of vaccinated and unvaccinated among syphilitics; and, in like manner, of tuberculosis and cutaneous diseases. Only in the instances of cutaneous diseases and syphilis were the statistics sufficiently complete to admit of deductions. The danger of inoculation of these diseases was 13 per cent. If this be correct, he concluded that, as the danger of smallpox was lessened several hundred per cent. by vaccination, whereas this operation exposes to a danger of but 13 per cent., the immunity which it conveys is at the worst cheaply purchased.

DR. C. A. LEALE, of New York, stated that he could verify most of the statements made. His opportunities for investigation in this field had been extremely large, and all the testimony went to prove the protective power of vaccination. That diseases could be communicated by vaccination, there could be no doubt, but the frequency of such inoculation is very small. During more than a year not one case of smallpox has occurred in New York, a fact due, he thought, to the systematic methods of vaccination in practice there.

DR. W. M. WITMARSH, of England, proposed a number of questions eliciting the facts that both bovine and humanized virus are used in Hungary; that but one child, so far as he was aware, had died directly as a result of vaccination, although it is difficult to state the relation of many other cases to the operation.

DR. LYNCH, of Baltimore, thought that no one could examine the statistics without arriving at the conclusion that vaccination does protect from smallpox, if, indeed, it did not also convey some degree of immunity from other diseases. He referred to the prevalence of smallpox in Washington in 1863, when the disease was confined, as is shown by accurate statistics, almost exclusively to the unvaccinated.

DR. KAPOSI stated that he had papers to prove that the late Dr. Keller, of Vienna, whose work had proved probably the most formidable weapon of the anti-vaccinationists, had deliberately distorted facts in order to favor that sect, and asked that a committee be appointed to examine these papers and report at a subsequent session.

DR. W. M. WHITMARSH, of England, read a paper entitled

VACCINATION AND PASTEUR'S TREATMENT.

The treatise consisted of two distinct parts, the former considering vaccination as a preventive of smallpox, the latter the treatment of rabies by Pasteur.

The essayist did not feel justified in affirming that vaccination does bestow an immunity from smallpox, although he would admit that while pock-marked faces were common in London forty years ago, they are infrequent at the present time. Many other diseases have become relatively as much reduced in their frequency as has smallpox, without however, the aid of any such process as vaccination, as is the case with typhus fever, and the plague. This should make us cautious in our conclusions. He closed this part of his address with the petition that all who heard him would use calf and not humanized lymph, as there could be no doubt that the danger from the conveyance of disease by it is much less.

Pasteur's treatment he reviewed at considerable length. He called attention to the apparent errors in the processes, as well as in the selection of cases, and the conclusions arrived at by Pasteur in regard to the curative value of his treatment. That rabies is due to the microbe to which it is assigned by Pasteur is by no means established. The same microbe has been found in the saliva of healthy individuals, and it has been shown by one investigator that a fatal disease can be produced in rabbits by the inoculation of this parasite after the manner of Pasteur. Further, control experiments have not been undertaken by Pasteur. In this connection the essayist proposed the adoption of the test to which vaccination was put in England forty years ago, namely that criminals should be given the choice of meeting their lawful punishment or of undergoing the inoculation according to the method of Pasteur, then, after three months to have a small wound made in their integument and into it place a small amount of virus from a rabid dog. Investigations of this character would soon demonstrate whether or not the inoculations convey an immunity. Cases are unquestionable in which the animal which has bitten the individual afterward resorting to the Pasteur treatment has not been rabid, as supposed. The essayist narrated at some length several such cases which were well authenticated.

He had been strongly impressed by the fact that dogs are permitted to make their abode in the laboratory of Pasteur and eat as freely as they desire of the rabbits, even of the rabid (?) medulla used in the inoculations, and yet he was assured by an assistant that their doing so was entirely devoid of danger.

Finally, he asserted, it has been established beyond doubt that in several cases death has followed the inoculations of Pasteur in which the symptoms displayed not the features of hydrophobia, but of a disease indentical in character with that witnessed in the rabbits which are made to succumb to the inoculations. It is not improbable, therefore, that as a result of these inoculations there has been produced a disease which from analogy should be called Pasteurophobia, in its results far from dangerous. He asked that before risking human beings to the dangers of these inoculations, further demonstrations of their safety and value should be awaited. Bad as it is to be bitten by a mad dog, it is far worse to have injected into one's abdomen ten times as much mad rabbit when, in all probability, the patient has not been bitten by a rabid dog.

DR. C. A. LEALE, of New York, thought that in most of the cases supposed to have been bitten by rabid dogs the animal was not in reality mad, and that the successful results of Pasteur's treatment were largely due to this. The effect of such alarms upon the nervous systems of the delicate can be readily imagined. In conclusion he hoped that in the light of our present knowledge the profession will not resort to Pasteur's method.

DR. WELCH, of Philadelphia, expressed his belief in the preventive power of vaccination and his preference for humanized virus. The danger of inoculation of other diseases with the vaccine virus he did not consider a sufficient argument against vaccination.

Adjourned.

GENERAL SURGERY.

DR. JOHN HOMANS, of Boston, reported

THREE HUNDRED AND EIGHTY-FOUR LAPAROTOMIES FOR VARIOUS DISEASES.

His general method of operating is as follows: The sponges are prepared by soaking in 1–1000 corrosive sublimate solution; they are then wrung out dry by an ordinary wringing machine; they are then kept in a 1–20 carbolic solution. The carbolic acid spray is always used, although it is considered unnecessary. An electric light is always kept in readiness.

Of the first five unantiseptic operations all the patients died. Of the antiseptic operations, 248 recovered and 34 have died. The vitality or viability of the patient has much to do with the result of the operation. The usual causes of death have been peritonitis or septicæmia. He was sceptical about the occurrence of mechanical intestinal obstruction, except as the intestines are paralyzed by peritonitis. Two cases in which the bladder was wounded during ovariotomy, recovered, and are living two and six years respectively after operation. In both cases the opening in the bladder was closed with silk sutures. Of the recoveries, nine patients died of abdominal cancer, a few months or years after recovery, and thirty have ventral hernia. There were fifteen children born to eleven women out of about two hundred heard from. The sexes do not correspond to the ovary remaining.

The usual length of his incision is about two inches. The stump is always tied, burned, and dropped back. Silk sutures are used, and care is taken to include all the abdominal parietes, particularly the transversalis fascia. Drainage was used in fifteen cases. The greatest number of consecutive recoveries after ovariotomy has been thirty-eight. The author had seen a suppurating ovarian cyst but once, and in that case the cyst had been tapped. There are cysts which contain fat and sebaceous matter, which to the naked eye looks exactly like laudable pus, and can only be distinguished from it by microscopical examination. There were two cases of swelling of the parotid gland after ovariotomy. Both recovered quickly, and he did not regard enlarge-

ment of the parotid during convalescence as of special importance.

DR. J. M. MATHEWS, of Louisville, Ky., in a paper entitled

WHEN IS COLOTOMY JUSTIFIABLE?

presented the following conclusions:

1. Colotomy is not justifiable in cases of cancer of the rectum. 2. In stricture or obstruction of the rectum, from whatever cause, within three and a half inches of the sphincter, colotomy should not be done. 3. The operation is not warranted in cases of ulceration of the rectum, unless of specific origin and accompanied with stricture beyond the reach of the finger. 4. Colotomy should not be performed for the presence of a tumor or aneurism causing pressure on the bowel. 5. In cases of congenital occlusion of the rectum, the operation is not to be recommended. 6. In cases where the operation is looked upon as a *dernier ressort*, colotomy should not be done, save for total obstruction, of benign or specific origin, located further than three and a half inches above the sphincter. 7. Where the rectum or sigmoid flexure is closed by a stricture of benign or specific origin, colotomy is indicated.

The reasons for advising against colotomy in the cases given above were: first, that the operation does not prolong life; second, admitting that life could be prolonged, the operation is not advisable; third, instead of prolonging life, surgical interference shortens life; and fourth, the pain is not materially lessened by the operation. Where the disease is located within three and a half inches of the sphincter, it may be treated by division. In other cases rectotomy is recommended.

DR. W. W. DAWSON, of Cincinnati, thought that there are cases in which colotomy seems to be indicated. He had now a patient of seventeen with an immense cancerous mass in the rectum, almost beyond the reach of the finger, and narrowing the calibre of the bowel to half an inch. There is, however, not the slightest sign of cachexia; the growth is accompanied by extreme pain. He had almost decided to open the abdomen, and, if possible, remove the mass with a portion of the gut. This operation has been done in Europe, but it is not old enough to enable us to judge of the results to be obtained. In syphilitic cases, where there is stricture, the stricture disappears under antisyphilitic treatment.

DR. SAMUEL BENTON, of London, understood the author to say that colotomy is not to be recommended for total obstruction due to cancer of the rectum. In his practice, if he can get beyond the cancer, he extirpates. If the growth is so high that he cannot remove the whole of it, he performs colotomy. He would recommend colotomy in these cases of cancer of the rectum. In the cases that he has seen life has been prolonged about fifteen months after colotomy. The last case lived eighteen months. There was complete obstruction, and if the operation had not been performed the patient would have died in two weeks. It is his experience that the straining and bearing-down at stool is relieved by colotomy. The growth, to a certain extent, remains at a stand-still, and a considerable amount of the pain is relieved. After rectotomy the stricture quickly returns. He treats benign tumors by electrolysis. This quickly relieves the stricture. This treatment is safe, and can be continued while the patient remains at his ordinary work. The stricture may return, but it can be kept down by a repetition of the electrolysis, or by dilatation practised by the patient.

DR. J. W. C. O'NEIL, of Gettysburg, thought that the proper course to be pursued in the case referred to by Dr. Dawson would be to put the patient under chloroform, inject the mass with carbolic acid and scrape it out. This will afford relief.

DR. J. W. HAMILTON, of Columbus, uttered a sound of warning against carbolic acid in the treatment of diseases of the rectum. The use of this agent is fraught with danger. Where there is obstruction due to cancer of the rectum colotomy should be performed.

DR. E. M. MOORE, of Rochester, said that it is extremely rare to have cancer at the age of seventeen, but sarcoma is very common. This is not accompanied by the cancerous cachexia, and every surgical operation for sarcoma is a failure. He would recommend colotomy.

DR. W. H. HINGSTON, of Montreal, said that the operation of colotomy should be performed where there is obstruction. It also relieves pain. When the whole of the mass can be gotten away, rectotomy should be performed.

DR. J. W. C. O'NEIL, of Gettysburg, had used carbolic acid for ten or fifteen years and as a general rule had found it of value.

DR. MATHEWS believed that carbolic acid was a hazardous remedy and has led to hundreds of deaths.

DR. DONALD MACLEAN, of Detroit, reported

THREE CASES OF LAPARO-NEPHROTOMY.

CASE I.—Mrs. A., aged twenty-five years, presented herself with what had been diagnosticated as an ovarian tumor. There was a cystic abdominal tumor about the size of the uterus at the seventh or eighth month of pregnancy. There was no history of renal trouble and no evidence that the tumor was connected with the kidney. The patient insisted that it had begun to grow from below. The operation was done with the expectation of removing an ovarian tumor. The left ovary was found enlarged to the size of a goose-egg and was removed. The large tumor was found to arise from the kidney, and it was removed. The patient did well for a time, but suppuration, with the formation of a fecal fistula, occurred. The patient finally made a perfect recovery.

CASE II.—Mrs. T., aged forty years, presented herself with a tumor of the left side of the abdomen which had been discovered six years previously. The enlargement had gradually increased. The tumor when first seen was too high for the ovary and too low for the spleen. The urine was normal. A diagnosis of tumor of the left kidney was made. It was decided to adopt the transperitoneal method of operating. A large cyst of the kidney was found. During removal it ruptured with the escape of a material like soft soap. The posterior layer of the peritoneum was brought together with sutures. The case did well until the eleventh day, when the temperature went up until it reached 104°. Examination showed fluctuation in the lumbar region. An opening was made with the escape of a large quantity of pus. Symptoms of collapse followed this operation, but these were overcome and the patient made a gradual recovery.

CASE III.—A female infant, twenty-two months old.

The family history was good. There was a tumor in the right hypochondriac region. This was movable and free from tenderness and pain. Tumor of kidney was diagnosticated and removal recommended. The incision was made just external to the rectus muscle. No difficulty was experienced and the operation was completed in seven minutes. The posterior layer of the peritoneum was closed with catgut sutures. For several days the case progressed favorably, but the temperature remained high. On the fifth day a careful examination was made to determine the cause of the elevated temperature. During the examination the child coughed and the abdominal incision gave way, allowing the intestines to escape. These were replaced and a search failed to show the source of the trouble. The wound was reunited. The temperature continued high and the child died on the ninth day. At the autopsy the posterior layer of the peritoneum was found united and in the space occupied by the tumor a small collection of pus was found surrounding the ligature on the pedicle of the tumor.

Dr. Maclean said that while the lumbar operation might be the safer there were cases in which the transperitoneal operation was preferable. These cases point to the necessity of efficient drainage although antiseptic precautions are adopted.

MILITARY SURGERY.

DR. JOHN ANDERSON, of London, read a paper on

HEATSTROKE IN INDIA.

DR. MARSTON, of London, in the discussion which followed, dwelt on the difference between heat-exhaustion, sunstroke, and heat-apoplexy. He related some of his experience in India and Egypt, and called especial attention to the sequelæ of these affections, among which he enumerated abnormal and erratic temperaments, insomnia, loss of "nerve," neuralgic headaches, neuralgias generally, and occasionally, though rarely, short attacks of mania. Sometimes the nerves of special sense are affected. Although motor paralyses do occur, they are rare compared with the other forms of nerve lesion. He dwelt on the importance of using a neutral and soluble form of quinine for hypodermatic injection, as tetanus is very liable to occur after slight punctured wounds in hot climates.

DR. LLOYD, of England, considered the prophylaxis and urged the importance of temperate living, good ventilation, and a strict observance of the laws of hygiene generally. Heatstroke, he said, is not ordinarily frequent in the British Navy; ninety per cent. of the cases occur in the Red Sea, and are mainly limited to a class comprised of bakers, cooks, saloon stewards, and stokers. The mode of living is likely the predisposing cause.

DR. SHERWOOD spoke of some of the sequelæ of sunstroke that came to the notice of the Pension Bureau of Washington. He said that cardiac debility and various neuroses, as epilepsy, neuralgia, headaches, etc., are common, and are causes which constitute disability.

DR. ELI A. WOOD, of Pittsburg, said that the exalted temperature of thermic fever is the only pathological condition worth considering in the treatment of heatstroke, and that the sequelæ would surely follow if the abnormal temperature was not reduced within a very short time to near the normal. He held that if the temperature was reduced, all the other symptoms would speedily disappear. Those cases occurring in this latitude are also much benefited if, in addition to the external application of cold, they be given a single hypodermatic injection of 15 grains of antifebrin.

DR. MAX J. STERN, of Philadelphia, remarked that some cases of thermic fever with marked pyrexia were speedily and permanently benefited by bloodletting.

DR. ANDERSON concluded by saying that in no sense did he wish to imply that reduction of temperature is the only one thing to be done in the treatment of these cases, and that external cold and antipyretics are the approved agents for that purpose. In the few cases he could speak of in which bloodletting had been employed death was the inevitable result.

DR. ROBERT REYBURN, of Washington, read a paper entitled

ARE WOUNDS FROM EXPLOSIVE BALLS OF SUCH A CHARACTER AS TO JUSTIFY INTERNATIONAL LAWS AGAINST THEIR USE?

The chief endeavor in the battles of ancient times was to kill as many of the enemy as possible in a given time. The same end is attained in modern battles, but it has been found that an enemy wounded sufficiently to become *hors du combat* is practically much more a source of weakness to his comrades than if he were slain in battle. It is probably too low an estimate to state that every wounded man needs the services of two able-bodied men for his care and sustenance until he becomes again fit for military duty. If, then, the object of modern war is not the taking of life, but rather the disabling and rendering unfit for active service of the enemy's soldiers, why should the inevitable horrors of war be further aggravated? The use of explosive balls does not accomplish any more effectually the disabling of the combatants, but converts slight wounds into grave and fatal injuries of vital organs. The characteristics of wounds caused by explosive balls or bullets are great shattering of the bones at point of injury, with comminution of the fragments, the soft tissues are extensively lacerated, with great destruction of the parts; this is followed by extensive sloughing. In many cases the reparative powers of nature are insufficient to fill up such extensive loss of tissues. The injuries are often accompanied by the dangers of both primary and secondary hemorrhage, and are also followed by the frequent occurrence of erysipelas and pyæmia. For these reasons, and for the sake of common humanity, we believe that the use of explosive balls or bullets in war should be forever prohibited by international law.

DR. CHARLES HOBART VOORHESS followed, with a paper entitled

ARE WOUNDS FROM EXPLOSIVE BALLS SUCH AS JUSTIFY INTERNATIONAL LAWS AGAINST THEIR USE IN WARFARE?

The object of wounding in warfare, he said, is to disable. It is most humane and effective simply to wound and not permanently disable. To kill a soldier disables only one man, but simply to wound one man takes away three, because two are required to carry him to the rear. He suggested the calling of an International

Medical Congress to protest against the present methods of destructive warfare, and offered the following resolution:

"*Resolved*, That, in accordance with the sense of this Section, the Secretary be instructed to present this opinion to the Ninth International Medical Congress, and ask that the Congress direct that the expression of their opinion on the subject of international laws against the use of explosive bullets in warfare, be forwarded to the President and Secretary of State of the United States, and to each representative of the Foreign Legation at Washington, with a request that each shall transmit the same to his respective Government."

DR. JEFFREY A. MARSTON, of England, did not know of the use of explosive balls in warfare, though they are used by sportsmen in tiger shooting, and in hunting other large game. Balls exploding in the air, such as shells and Shrapnel shot, were necessary to render as many members of an advancing column as possible *hors de combat*, and he did not see the necessity for the resolution.

THE PRESIDENT, DR. HENRY H. SMITH, explained that the object of the motion was to give the United States an opportunity to place herself in the rank of the humane nations.

The resolution was then carried *nem. con.*

DR. JEFFREY A. MARSTON, of the British Army, then read a paper on

AGE AND ACCLIMATIZATION OF SOLDIERS IN REFERENCE TO SERVICE.

He held that men make the best soldiers between the ages of twenty-five and thirty-five years; that while young men are better able to make great sudden exertions or undergo such strain, older men have greater powers of endurance. Short-term men suffer more with sickness than those who have been long in service. This is especially true of enteric fever, and the statistical returns to the English Office are so monotonous in their uniformity in this regard that it may almost be considered a general law that length of service lessens the liability to enteric fever. The time for gaining comparative immunity from this affection is about two years, and continued service gives almost absolute immunity.

DR. MORSE K. TAYLOR, U. S. Army, said that the heart is the first organ to fail after the first two years. In this respect his observations of our soldiers agree with the author's investigations of English soldiers.

OBSTETRICS.

DR. JAMES C. CAMERON, of Montreal, opened the session with a paper on

THE INFLUENCE OF LEUKÆMIA UPON PREGNANCY AND LABOR.

Our knowledge of leukæmia is fragmentary and incomplete, especially in regard to its influence upon the sexual and reproductive functions of women, and the broader question of heredity. We find it stated that sometimes menstrual and sexual disturbances are among its early prodromata—that it is most frequent at the climacteric—that in a few cases it has developed during pregnancy, or after several miscarriages or difficult labors, or after the sudden suppression of the menses from cold; that in the non-pregnant, amenorrhœa is the rule, though menorrhagia has been observed, and that uterine hemorrhage is rare. By a careful search through the literature of the subject, he had found reports of four cases in which leukæmia was alleged to have occurred during the course of pregnancy, but none where a woman already leukæmic has been known to have become pregnant. One case reported by Dr. Ingle to the Cambridge Medical Society in 1881, was rather a case of exaggerated leucocytosis of pregnancy than one of true leukæmia. Three other cases were reported to the Edinburgh Medico-Chirurgical Society in 1870, by Dr. Robert Paterson, but as a blood count was not made, and no autopsy held in the two fatal cases, their value is seriously impaired.

The case he reported is unique, as far as he had been able to ascertain, and possesses some points of unusual interest.

1. *Family history.* Grandmother, mother, and probably brother, have suffered from symptoms pointing to leukæmia. Two of her own children have had well-marked leukæmia, another is now in ill health with diminished red corpuscles and enlarged spleen. None of her children reach the standard of 5,000,000 red corpuscles per c.mm. Has leukæmia in this case been hereditary?

2. *Splenic tumor* was first noticed by the patient at the *beginning* of her sixth pregnancy.

3. *Spleen and liver* always enlarge during pregnancy and become tender.

4. Progressive enormous increase of white corpuscles, together with decrease of red corpuscles as pregnancy goes on.

5. *Absence of uterine hemorrhage* during labor and the puerperal period; labor was dry and bloodless, and lochia untinged with red.

6. Rapid subsidence of œdema and dyspnœa after the termination of labor, together with the rapid increase of red, and decrease of white cells.

7. Thoroughness of recovery, so as to be able to work; and the remarkably chronic course of the disease.

8. Recurrence of pregnancy—now the third time since splenic enlargement was noticed.

9. Remarkable difference between blood of mother and child, and between the blood in sinuses, vein and artery in the placenta.

10. Disastrous effect of nursing upon the child—causing purpura, vomiting, purging, and death.

DR. C. W. EARLE, of Chicago, referred to the operation of cirrhosis of the pancreas, as an etiological factor in the leukæmia of pregnancy.

MM. CHARPENTIER and BUTTE presented a paper on

EXPERIMENTAL URÆMIA; ITS INFLUENCE ON THE VITALITY OF THE FŒTUS.

They described a series of experiments upon pregnant rabbits to which urea was given in (1) doses large enough to prove rapidly fatal; (2) in daily doses of thirty grains or one drachm for a period of eight or ten days. The conclusions reached from these experiments were, that the fœtus was killed with the mother. The cause of the death of the fœtus was not the sudden diminution of blood pressure in the maternal circulation, as held by Runge, nor the diminution in the oxygen of the maternal blood, but a direct fatal intoxication of the fœtus by maternal blood surcharged with

urea. The views suggested by the experiments, the authors claim, are confirmed by their clinical observation.

Prof. Lusk, of New York, remarked that formerly he was of the opinion that the fœtus died of asphyxia —accumulation of carbonic acid in the blood—but owing to the researches of Charpentier and others, it was necessary to add the factor of direct poisoning by urea, and other retained excrementitious urinary products.

Dr. Duncan C. McCallum, of Montreal, thought Charpentier's paper an argument for the induction of premature labor in the interest of the child, as well as of the mother, in cases of morbus Brightii during pregnancy.

Dr. Sänger, of Leipsic, then opened a discussion

ON THE CÆSAREAN SECTION.

The good results obtained by the Porro operation, he said, put forawhile Cæsarean section in the background. With the use of antiseptic precautions, and with some improvement in the performance of the operation, such good results have been obtained by the Cæsarean section, that this operation is now preferable to Porro's in the following cases: 1st. When the child is living, and cannot be delivered alive by any other operation, as by application of forceps, turning, or the induction of premature labor. 2d. When the child is dead, and cannot be delivered by craniotomy or embryotomy, or only be delivered with the greatest danger to the mother. But good results can be obtained by Cæsarean section only under certain conditions, and when the operation is performed according to new and approved technical principles.

The conditions required for a successful performance of Cæsarean section are, (*a*) absence of septic infection in the uterus; (*b*) early performance of the operation; and he thinks that the reason why American physicians have not obtained the same good results as he, is that they delayed the operation too long, or were not called upon to perform it until after other operations had been unsuccessfully tried.

In regard to the technique of the operation, he laid stress on the following points: The preparation for the operation, and the antiseptic precautions should be made as in case of laparotomy. In private practice, some of the measures could be simplified, but essentially they ought to be the same. The opening in the abdomen is made in the linea alba, but should correspond to the incision of the uterus. Therefore, the incision is made without regard to the navel, over the middle of the fundus toward the middle of the symphysis, extending about six and a quarter inches. It is not advisable to evert the unopened uterus, on account of the large incision required for this purpose, except in cases where the fœtus is dead, or there is not sufficient assistance. He also opposes the application of the elastic ligature before the uterus is opened, because the ligature endangers the life of the child, or may incarcerate parts of the child, so that the ligature must be loosened at a time when the hands of the operator are required for more important things. Beside this, the danger from hemorrhage is not so great as is commonly supposed, and can be easily diminished. He never everted the uterus *in toto*, nor applied the ligature before the incision of the uterus. He opens the uterus in situ by a frontal median incision; if he hits the placenta, he cuts through it or separates it on one side. The child is extracted by the legs, and if the head becomes incarcerated the incision is enlarged upward, to prevent a laceration of the wound downward. At the same time an assistant presses the abdominal walls to the uterus, to prevent prolapse of the intestines, and the flow of fluid into the abdominal cavity. By pressing on the inferior segment, and by a slight torsion or flexion of the uterus and of the broad ligaments, the hemorrhage can be lessened. There is some danger in the removal of the elastic ligature, and he advises to do without it if possible.

In regard to the application of sutures, he drew attention to three points, which are considered as the most important: 1. Accurate union of the incised surface of the uterus by numerous sutures, whereby a broad and close union is obtained. 2. Avoidance of suture canals in the cavum uteri. 3. Especial union of uterine surfaces instead of the serosa uteri. As suture material, he prefers silk to silver wire, because silk can be absorbed. Lately, excellent results have been obtained with catgut prepared in oil of juniper, or chromic acid, or sublimate.

Sänger gives the following indication for the Porro operation when the flow of secretion of the uterus is impeded by stenosis of the cervix or vagina, or by tumors, and in cases of infection of the corpus uteri. But he prefers Cæsarean section when the myomata are retrocervical or retrovaginal, because the removal of the whole mass, under the circumstances, is impossible, or very dangerous, and to remove the uterus alone has no result of value.

In cases of osteomalacia he prefers the Cæsarean section, with removal of the ovaries, to the Porro operation. He takes exception to A. Martin's recommendation to perform the Porro operation in cases in which the puerperium becomes dangerous to the woman, as in cases of far advanced affections of the heart or lungs. He thinks that a woman in such a case has as good a chance of recovery after Cæsarean section as after the Porro operation.

GYNECOLOGY.

Both morning and afternoon sessions were devoted entirely to the reading of papers, discussion being postponed until a subsequent occasion.

The morning session was opened by a paper which was sent by Dr. H. R. Bigelow, of Washington, the subject being

CONSERVATIVE GYNECOLOGY.

His idea was that surgery is conservative when it tends to alleviate suffering without depriving the human frame of any of its component elements. Conservative gynecology was defined as any plan which tends to preserve the just equilibrium of human energy in this specialty, before resorting to means for the elimination of the offending organ. It is thus opposed, in a certain sense, to surgical gynecology in which the too free use of operatives measures constitutes a dangerous tendency. It was not believed to be sufficient that a gynecologist be well informed as to the anatomy and physiology of his particular department; it was obvious enough that he should be well equipped in general medicine. This

notwithstanding the fact that few medicines are of use in diseases which are peculiar in gynecology.

Alluding to the subject of fibroid tumors of the uterus, he called attention to the good results which had been obtained by systematic treatment with ergot, and formulated his belief as to the proper treatment of such growths as follows:

1. Many remarkable cures of submucous uterine fibroid tumors from the use of ergot are collected, which is ample reason that this subject should receive careful attention. 2. Electricity is also a remedial agent of great value for these neoplasms. 3. The use of tonics, aperients, and suitable hygienic measures should be properly systematized. 4. Cutter's diet treatment should receive careful investigation. 5. Early operations for these growths are only exceptionally required. 6. Dangerous hemorrhage from them is not the rule. 7. The percentage of these tumors in which life is endangered by hemorrhage is small. 8. An operation should only be the last resort. 9. Hysterectomy, myomotomy, and oöphorectomy will always be dangerous operations, and their dangers should be clearly pointed out to patients.

Conservative gynecology is entirely applicable to tubal diseases and inflammations of the ovary. Oöphorectomy for epilepsy, *per se*, can hardly be conceived to be of advantage by any logical process. Operations for the relief of dysmenorrhœa are seldom indicated.

DR. WEEKS, of Portland, Maine, presented a paper entitled

PREGNANCY COMPLICATED BY UTERINE FIBROID TUMORS.

The paper was based upon a case in which this grave complication existed, and in which the author's preference was to wait until term and then perform Cæsarean section. His opinion was overruled, however, and he was obliged, in deference to the opinion of several distinguished colleagues, to induce premature labor at the fifth month. He succeeded in delivering the fœtus after decapitation, but the mother did not rally from the shock of the operation.

Of thirteen distinguished gynecologists whose opinions upon this subject were obtained by correspondence, nine were in favor of premature labor. To this opinion the author dissented, believing that the best results must usually be obtained by allowing the gestation to continue to term, and then performing Cæsarean section, removing the ovaries and tubes at the same time if possible.

DR. GRAILY HEWITT thought that failure in the author's case might have been due to too rapid evacuation of the uterus. In such cases labor should proceed very slowly.

DR. TRENHOLME, of Montreal, narrated three cases in his experience in which gestation was complicated by the presence of uterine myomata, all of which resulted favorably for the patients. He believed that women with such tumors should not despair of becoming impregnated, and that in very many cases they might with safety go to term.

DR. LAWRENCE, of Bristol, England, observed that the question had arisen as to the propriety of marriage for women who were known to have fibroid tumors of the uterus. His opinion was, that marriage was proper if the woman were not suffering from the symptomatic effects of the tumor. He had seen eight cases in which pregnancy was complicated by such tumors, and in several of them the effect of the pregnancy was to dispose of the tumors. He thought that premature labor should not be induced if there were any reasonable prospect that there would be a normal termination.

DR. GORDON closed the discussion (in the absence of Dr. Weeks), expressing his opinion that premature labor in the author's case was not the proper procedure. He agreed with Dr. Hewitt, that if labor were induced in such cases, it should proceed very slowly. The position of the fibroid should be influential in deciding as to the method of procedure. If the tumor were in the cervix, and likely to fill the pelvis and occlude the parturient passage, prematurely induced labor would usually be indicated.

DR. DANIEL T. NELSON, of Chicago, presented a paper on

THE TREATMENT OF UTERINE MYOMA WITH ERGOT.

It was shown that the influence of this drug upon hypertrophied muscular fibre was much more intense than upon normal. Hence, also its influence must be much more positive upon a diseased (*i. e.*, hypertrophied) uterus than upon a normal one. Its influence must also depend upon the position and surroundings of the tumor, with respect to the mechanical advantage to be gained. Its use by suppository or subcutaneously was often possible when it would not be tolerated for a long time by the mouth. Collective investigation upon this subject should receive earnest attention. The conclusions were:

1. The cases upon record show conclusively the value of this method of treatment.

2. Hyperæmia of the uterus whether induced by miscarriages, displacements, or other abnormal conditions predisposes to the development of these neoplasms.

3. A probable additional cause is some nervous disorder of a trophic character.

4. Ergot is not indicated if the tumor is subperitoneal and adherent to surrounding viscera.

5. Gangrene, from the prolonged use of ergot, is not likely to occur.

DR. BOZEMAN criticised the author's statement that fibroid tumor of the uterus is infrequent in black women. His experience, and that of many other gynecologists, was that black women are much more susceptible to such conditions than white women. On the other hand, ovarian tumors in black women are rarely seen.

DR. NELSON, in closing, said that no one had offered any suggestion which had convinced him of the superiority of any medicinal agent to ergot in the treatment of fibroid tumors of the uterus.

DR. APOSTOLI, of France, read his paper entitled

FARADISM IN GYNECOLOGY.

The value of the induced current as a therapeutic agent was enunciated, and reference made to the author's extensive experience for the past few years in this direction. The coils and electrodes devised and used by the author were exhibited, and the method of using them described.

The author's system of treatment was also explained

at length in English by Dr. Smith, of Montreal, recently a student with Apostoli, subsequent to the reading of the paper.

DR. SMITH, of Montreal, read a paper upon

A NEW THEORY OF TREATING UTERINE DISEASE AND DISPLACEMENTS BY ELECTRICITY.

This theory consisted essentially in the use of electricity after Apostoli's method. The principal cause of uterine disease was said to be want of muscular tone; restore this tone, relieving thereby the organ of its superfluous blood, especially venous blood; improve also its nervous apparatus, and the disease would disappear.

The great value of the electric current in relieving pain in the pelvic organs was also a matter of personal observation by the author.

DR. F. H. MARTIN, of Chicago, read a paper on

THE ELECTROLYTIC TREATMENT OF UTERINE MYOMA,

based upon Apostoli's method of treatment. One of the chief elements of value consisted in exactness of dosage, which is now rendered possible by the use of the milliampèremeter. The factors in this plan of treatment are

1. The local effect of the pole; acid effects being obtained at the positive, and alkaline at the negative pole. Density, rather than volume, is the efficient means; hence arises the method of treating hemorrhage in connection with these tumors.

2. The atrophic effect of the current; it is not the electrolytic action alone which produces the desired end.

3. The electrolytic action of the current. The combined elements being separated, absorption is favored.

4. The antineural effect of the current.

The electrodes used by the author were exhibited and described. For the external pole, an ingeniously constructed hollow disk covered with membrane is used, which, being filled with water and placed upon the abdomen, diminishes to a great degree the resistance of the skin.

No galvanopuncture is used, as done in Apostoli's method, an electrolytic effect, and not a caustic being alone required. A current of more than 100 milliampères is never used. The advantages of this method are: 1. It is free from danger. 2. It is painless. 3. It checks hemorrhage. 4. It rapidly reduces the size of the tumors. 5. It stops neuralgia. 6. It admits of exactness of dosage.

The papers of Drs. Cutter and Semeleder upon the same subject as the foregoing were referred to by the Chair. They will appear in the published Proceedings of the Congress.

DR. ALFRED C. GARRATT, of Boston, read a paper upon

THE TREATMENT OF TUMORS OF THE BREAST BY ELECTROLYSIS.

A prime necessity was that the tumor should be seen in its early stage—whatever its character. Under such a condition women should be encouraged to believe that they could be radically cured. Broad and soft electrodes were used by the author, the entire surface over the tumor being submitted to the action of the current. Each séance should last twenty to thirty minutes, and the current should not exceed 5 to 50 milliampères, according to the resistance. The applications might be made every day or every other day. In some cases only three to four applications were necessary, in others twenty to thirty. The interrupted current might be used for a few minutes after having used the primary. The author had treated 180 cases of mammary tumor by this method, and in 157 there had been a cure, with no recurrence, so far as he knew, in a single case.

DR. ALEXANDER DUNLAP, of Springfield, Ohio, read a most interesting paper on

EARLY EXPERIENCE IN OVARIOTOMY.

His first operation was done in 1843 amid great difficulties and opposition, at the earnest request of the patient, who was conscious and intensely interested during the entire procedure. She lived for twenty days and then succumbed to kidney disease.

The paper was largely reminiscent and showed the great obstacles which were experienced by the author and his fellow pioneers.

DR. GILMAN KIMBALL, of Lowell, also gave interesting personal reminiscences, chiefly showing the hostility of the profession to ovariotomy and ovariotomists a generation ago.

DR. CORDES, of Geneva, Switzerland, presented a paper entitled

MEDICAL TREATMENT OF UTERINE CANCER.

This method of treatment was considered applicable only to those cases in which radical operation was inexpedient or impossible. It is a well-known fact that many cases in which palliative treatment alone is used survive a long time, perhaps as long as if operative measures had been adopted. Among the substances which may be used topically are solutions of sulphate of copper, sulphate of iron, bromine, acetic acid, iodized glycerine, pepsin, and papaine. The author gave the preference, however, to terebene which he is in the habit of applying on cotton-wool every two or three days. His results with such applications have been very satisfactory.

DR. ERNEST CUSHING, of Boston, concluded the afternoon's work with a paper entitled

MALIGNANT DEGENERATION OF GLANDULAR HYPERPLASIA OF THE UTERUS.

He dissented from the commonly received views of Ruge and Veit, and Thiersch and Waldeyer, respecting the invariable epithelial origin of cancer. The unexplained part of their theory was the frequent appearance of accumulations of small, round cells with epithelial cells in the so-called transition stage, which the author had found did not terminate in many cases in cancer. Another theory must, therefore, be substituted for that of epithelial irritation, as a primary or potent cause, and the author was inclined to believe that it came from without, and, reasoning from analogy, was of an infectious nature. The more frequent use of the cautery was suggested in the treatment of cancerous growths, on account of its antiseptic influence.

The paper was followed by the projection upon an illuminated screen of a large number of photographs from microscopical sections made by the author in the

investigation of this subject, in which the difficulty of absolutely determining the existence of cancer in its earliest stage was amply shown.

Wednesday, September 7th.

General Session.

The Congress came to order at the call of the President, at 10 A M.

The Chairman of the Committee of Arrangements, Dr. A. Y. P. Garnett, announced that some misapprehension had occurred with regard to the reception at Grass Lands, the country residence of Secretary Whitney, that evening. This invitation had been restricted to those only whose presence was desired, as indicated by the receipt of special cards of invitation which had been issued. He further stated that tickets to the reception to-morrow night, at the Pension Office, had gotten into the hands of persons who do not belong to the Congress, and "in order to prevent the humiliating spectacle of Monday," presented at the conversazione, all invitation tickets would be cancelled, and delegates, who were requested to wear their badges, would be presented with new and proper tickets upon calling at the office of Albaugh's Theatre. He also said that, "in order to prevent foreign members being engulfed in the mob, as they were last night, at the President's reception," a special entrance has been arranged for them to-morrow evening.

Dr. N. S. Davis stated that as a special committee had been appointed at Copenhagen to consider and report at this meeting on the Collective Investigation of Disease, this committee (if any of them are present) would meet at the Riggs House in the afternoon.

The President repeated his announcement of yesterday, that the programme had been changed, so as to provide for the reading of but one address at each general session, in order not to interfere with the morning meetings of the Sections. He further announced that Dr. Neudörfer, of Vienna, and Dr. Lutaud, of Paris, who were to read general addresses, would be absent from the Congress, but no reason was assigned for their failure to appear.

The President then vacated the Chair in favor of Dr. Durante, of Italy, and Prof. Semmola delivered in French his address on

bacteriology and its therapeutical relations.

(See page 298.

At the conclusion of the address, Dr. Louis A. Sayre, of New York, said he was sure that all the members of the Congress had, like himself, been electrified and delighted as they listened to the eloquent address of Semmola. His masterly exposition of the important subject of bacteriology and its relations to therapeutics, and its wonderful influence upon the future of medicine, placed them under a weighty debt of obligation. He moved a unanimous vote of thanks.

Dr. Hingston, of Canada, seconded the motion in a few complimentary remarks, part in French, and part in English.

Dr. A. L. Gihon offered a resolution that the President of the Congress be authorized to appoint a committee, to consist of an equal number from each nationality represented in the Congress, for the purpose of selecting the place of meeting of the Tenth International Medical Congress to be held in the year 1890, which committee shall report on Friday morning, immediately before the address of Dr. Blandford. Adopted,

The session then adjourned.

SECTIONS.

Public Medicine.

The President read a paper forwarded by Dr. Benjamin W. Richardson, of London, on

some points in the growth of preventive medicine in great britain.

Dr. Richardson called attention to the fact that the English people being cut off from other countries by the sea, had to invent all measures of prevention for themselves; and yet this very isolation did good in the end, owing to the fact that it made England mistress of the seas, and by so doing necessarily produced conditions favorable to the study of public health, owing to the large number of men under control. England stands equal to any nation in the practice of preventive medicine. The necessity of preventive measures was illustrated by percentages showing the relative death-rate in the army, from disease and war in former years, as compared to that of the present day. In older times the death-rate from disease far exceeded the death-rate from injuries, but this condition of affairs has been almost reversed at the present day. Every war England has had has taught her a lesson in preventive medicine, and while the medicine has often been a bitter one, it has in the end proved of value. In the Crimean conflict measures for sanitation were carried out which had previously existed here in theory, while many other conditions arose which required urgently the entire attention of all persons interested in public medicine.

He also spoke of the changes produced in public institutions, such as prisons and workhouses, by the sanitary measures lately introduced, and of the decreased death-rate among the laboring classes by the same.

Dr. Joseph Jones spoke of the valuable information which the Civil War had given us in regard to these matters, and regretted that while the Federal army had been able to use its information by reason of the support of the Government, that the Confederate lessons had unfortunately almost perished, owing to want of proper care and support.

Dr. Y. R. LeMonnier, of New Orleans, read, in part, a translation of a paper forwarded by Dr. Domingos Freire, of Rio de Janeiro, Brazil.

the inoculation of yellow fever.

The author first narrated, as briefly as possible, the history of his discovery and announcement of the microörganism of yellow fever. Ever since 1880, he had labored to establish the identity as well as to produce an attenuated form of the virus of the disease which could be employed for the purpose of preventive vaccination. In addition to his first report he has published nine memoirs on the subject.

The microbe, he said, is an infinitesimally small vegetable organism, found in the blood as well as in the

secretions of the yellow fever patients. Its natural history is as yet very obscure. Science is as yet but lisping the first syllables concerning it. Observers have thus far pursued purely technical methods of study, without giving sufficient attention to the physical character, the mode of life, and the chemistry of the organism. This carelessness on their part has been to blame for many failures in the study of not only this but of all micro-organisms.

In the concluding portion, the author gave the statistics of his vaccinations in Brazil. He showed that the vaccinations, sanctioned by the government, had been made during a severe epidemic of the disease, in the worst quarter of the city, among persons, for the most part foreigners, and therefore more susceptible to the disease, living in a condition of wretchedness hardly conceivable in a foreign country. The result had been that, with almost no exceptions (the exact figures were given) those who were vaccinated escaped the disease, although they remained exposed to the contagion, whereas those who were unvaccinated died in vast numbers. In conclusion he asked attention to a number of monographs by himself and others on the subject in question.

[Dr. Freire's paper will appear in full in an early issue of THE MEDICAL NEWS.]

DR. J. MCF. GASTON was thoroughly convinced that the claims of Dr. Freire were honest, as he was stationed in Brazil during the first years in which the experiments were carried on, and was aware of their nature and the manner in which they were being received before he left that country. Further, he thought, it would not be possible for Dr. Freire to come so far away from home or even to publish so repeatedly his claims and the accounts of his investigations if they were not as he represented them, without giving occasion to his opponents at home to produce at least some evidences of the deception. In conclusion he proposed a series of resolutions which after amendment were adopted as follows:

Whereas, inoculation against yellow fever, if it prove successful after further examination, is clearly beneficial to the human race throughout the world, and

Whereas, the facts presented by the experiments of Dr. Freire afford reasonable assurance of its protective influence in Rio de Janeiro,

Resolved, that this Section recommends coöperative investigation of the results obtained by yellow fever inoculation as protection against that disease, and that adequate preparations by the governments represented in this Congress be recommended, and that the matter be brought to the attention of the general sessions of the Congress.

DR. JOSEPH JONES, of New Orleans, President of the Section, stated that he had confirmed all of the statements of Dr. Freire with reference to the microbic origin of yellow fever, and that he had many years ago seen and described the microörganism referred to.

DR. EDWARD LEIGHTON, of London, then read a paper on

THE METROPOLITAN SYSTEM OF DEFENSE AGAINST INFECTIOUS DISEASES.

The paper consisted in a review of the workings of the system in question throughout the large cities of England and Scotland, resembling very closely that with which we are amiliar in the cities of the United States The essayist concluded with a strong endorsement of the system and its workings, although he pointed out some important features in which it was yet in a measure defective.

GYNECOLOGY.

DR. CUTTER, of New York, read a paper on

GALVANISM OF UTERINE FIBROIDS.

The first operation was performed, in conjunction with Dr. Kimball, of Lowell, upon a patient of the latter, August 21, 1871. Platinum needles were used, and the tumor was punctured from opposite sides of the body, the needles then being approximated. The author had no knowledge that any similar operation had ever been performed previous to that one. The platinum needles were found unsatisfactory, not being stiff enough to penetrate readily the firm tissues of fibroid tumors. The author then devised electrodes of steel, one variety being triangular in cross section, and another corkscrew-shaped and gold plated. The battery was a single cell with a large number of elements, and a current of sufficient intensity for any practical purpose was obtained with it. In the development of his method the author experienced great opposition and hostile criticism. Referring to the alleged value of the milliampèremeter, the author thought it was not absolutely essential, as his own experience had demonstrated that good results could be obtained without it. Apostoli's criticisms of the author's work and methods were probably made without due appreciation of the facts.

DR. SMITH, of Montreal, replying for Dr. Apostoli, observed that the latter did not have the author of the paper in his criticism upon the methods for treating uterine fibroid tumors with electricity, which preceded his own. Apostoli preferred to puncture the tumor through the vagina rather than through the abdominal wall on account of the greater safety of the former in case of subsequent inflammation. This method of puncture was also favored on the ground of greater accessibility in most cases. Apostoli's proposition was, that all varieties of uterine and ovarian disease, with the exception of ovarian cysts and malignant diseases, were amenable to treatment by one or the other form of electricity. With regard to the curability of fibroid tumors without galvano-puncture, Dr. Martin had stated in his paper see Tuesday's proceedings) that they could be cured. If a puncture were made, Apostoli recommended the use of a trocar, which should be plunged into the tumor (per vaginam) to a depth of one-third or one-fourth of an inch. Antiseptic precautions before and after the operation should be the invariable rule.

DR. F. H. MARTIN thought it should be remembered that the milliampèremeter merely indicated the strength of the current which was passing, not its density or the resistance which it was overcoming: it was, therefore, not so essential a factor in the appliances for treatment as Apostoli maintained. He criticised Apostoli's method of treating hemorrhage on account of the enormous strength of current which it required. He was able to accomplish the same end with the use of far less force by applying sounds successively to different sections of the uterine mucous membrane, each sound being insulated except for a very limited extent, which varied

as to situation sound, the electrical current passing only through the non-insulated portion. He believed that Cutter's battery was inefficient for the purpose for which it was constructed, and that it could by no means give rise to a current which would traverse a space of two inches, through solid tissues, as asserted.

Dr. Kimball, of Lowell, being asked by the Chair for a brief account of his early experience with electricity in the treatment of fibroid tumors of the uterus, said that he believed the idea of such a method of treatment was original with him. He had become tired of telling women with such tumors that nothing could be done for them, and the use of galvanism occurred to him as an expedient that might be serviceable. Dr. Cutter assisted him in carrying out his ideas and in operating upon certain patients.

Dr. Garratt, of Boston, referred to experiments which he had performed upon rabbits to test the strength, resistance, and effect of galvanic currents. He found that no great pain was caused in the animals by the introduction of his electrodes, but when the latter were approximated within the tissues, there were evidences of intense pain. He found that it was quite possible, as Dr. Cutter had stated, to pass a current through and across two inches of solid tissue. This seemed to be contrary to the fixed laws of electricity, and he could only account for it by believing that the resistance within the tissues of the body was far less than at the surface.

Dr. Apostoli closed the discussion of his paper (see Tuesday's proceedings) by reiterating his belief in the necessity of exactness of dosage in the administration of electricity and the value of the milliampèremeter for that purpose. Such a plan of dosage was insisted upon if the medicament, calomel, opium, etc., were used to accomplish certain ends, and the same rule should hold good in the use of electricity.

Dr. Cutter desired to ask if Dr. Apostoli had ever actually cured a woman with fibroid tumor of the uterus by his method.

Dr. Apostoli replied that he had seen relief from the symptoms which such patients complained of under his treatment; that is, the women were no longer sick.

Dr. M. D. Spanton, of Hanley, England, forwarded a paper on

CYSTITIS IN WOMEN,

which was read by the Secretary.

The author wished to draw the line sharply between irritability of the bladder and inflammation or cystitis. The former is a very common condition, and can be excited by the greatest variety of causes, whether constitutional or local. If the irritability thus excited by whatever cause, be prolonged sufficiently, cystitis will result. The author considered the empirical treatment of bladder troubles quite unjustifiable. The organ should first be carefully explored, its true condition, and, possibly, its cause ascertained, after which it should be treated symptomatically, each case upon its own merits.

Dr. Graily Hewitt read a paper upon the

RELATIONS BETWEEN CHANGES IN TISSUES AND CHANGES IN THE SHAPE OF THE UTERUS.

Whatever the statements of various investigators may be as to the condition of the uterus post-mortem, the author did not believe such statements could be taken as a basis for propositions concerning the position and condition of the tissues of that organ during life and health. The term chronic metritis is in common use, to signify a softened, possibly enlarged condition of the organ, with or without a more or less offensive discharge from its canal. This need not be an inflammatory condition, or the result of inflammation. It more frequently coexists with a weak and flabby condition of the tissues of the body in general; that is, a condition of general starvation. With this condition the organ is very susceptible to changes of position when slight causes, such as traumatism, etc., are superadded. Then congestion and actual inflammation may follow; a puerile condition of the uterus also predisposes to faults of position. Hence it may be said that undue softness of the uterus, with imperfect nutrition, precede flexions. These are followed by congestions and hypertrophy. Compression of the uterine tissues from flexion, is followed by chronic metritis and endometritis.

Dr. W. C. Wade, of Holly, Michigan, then read a paper upon

DISPLACEMENTS OF THE UTERUS.

His conclusions were the result of an experience of 3000 cases, and he believed that displacements were more frequent than any other form of female disease. His conclusions were thirty-nine in number, and demonstrated principally that such conditions were most amenable to treatment by mechanical appliances, and that every gynecologist to be successful should be possessed of sufficient ingenuity to prepare an instrument suited for each particular case.

Dr. William L. Reid, of Glasgow, Scotland, read a paper entitled

THE REMOTE RESULTS OF THE OPERATION OF SHORTENING THE ROUND LIGAMENTS FOR DISPLACEMENTS OF THE UTERUS.

He defined remote results as those which occurred at least one year after the performance of the operation. Among British gynecologists, from whom the author had made personal inquiries upon this subject, Matthews Duncan, Skene, Keith, Playfair, and Wallace could not speak well of it as the result of personal experience and observation; Halliday Croom approved of it; Alexander himself thought it would accomplish certain results if properly done; and Adams had found permanent improvement several years after the performance of the operation in certain cases. If the operation were not done carefully and thoroughly, it should not be blamed if good results did not follow. In the author's experience (eight cases) there was permanent benefit in some and not in others. It did not seem to follow that general improvement would necessarily result even though the original displacements of the uterus remained permanently relieved. If the perineum has been destroyed and a pessary cannot be used to remedy a displaced uterus, this operation is indicated. Immediate relief may not be obtained, and it may be necessary for a patient to be under observation for six months after the operation has been performed. If a pessary can be worn after the operation, the results may be better than would otherwise be the case.

(*To be continued.*)

NEWS ITEMS.

WASHINGTON.

(From our Special Correspondent.)

THE MEETING OF THE CONGRESS.

THE auditorium of even the handsomest theatre never presents a very cheerful or inspiriting appearance in the daytime. The lights are dim, the scenery, divested of the artificial glamor of the footlights, looks unreal, and there is a general flavor of "funeral baked meats" pervading the whole atmosphere. Albaugh's Opera House, in which the International Medical Congress assembled for its ninth triennial session, proved no exception to this rule, though the theatre is new and well constructed. The slanting rays of light which fell from the windows half opened on the eastern side of the building, and glanced upon the Egyptian sarcophagus-like decorations of chocolate and old gold, and half illuminated the strange mixture of gray heads and young faces which crowded the auditorium, leaving in comparative obscurity the brilliant array of ladies and their escorts who crowded the galleries, gave to the scene a weird and strange effect. The whole of the lower part of the theatre was given up to the delegates, and they more than filled its utmost capacity. In the boxes and the galleries were the spectators, some of whom were the ladies who had accompanied the delegates, but many were visitors attracted out of curiosity and by the announcement that the President of the United States would be present and open the proceedings.

Long before the time named for the opening every seat was filled, and those familiar with previous sessions of the Congress, glancing around on the members assembled, saw a number of physicians who occupy high positions in the profession, but they were, at the same time, struck by the notable absence of a very large proportion of those who are best known in American medicine. Among the New England representatives, the Bowditches, Bigelow, Warren, Cheever, Storer, White, Blake, and the well-known features of the Autocrat of the Breakfast Table, Dr. Oliver Wendell Holmes, were missed. New York had evidently failed to send Gaillard Thomas, Jacobi, Barker, Draper, Sands, Dalton, Weir, Loomis, Markoe, Emmet, Agnew, Janeway, Delafield, and Noyes. Among the Philadelphia delegates one looked in vain for Stillé, Hayes Agnew, Leidy, Da Costa, Gross, Weir Mitchell, Bartholow, Wood, Pepper, Parvin, Osler, Duhring, or Goodell; and from the South and West many prominent men were also missed, including Donaldson, Johnston, Tiffany, Welch, Atkinson, Hunter McGuire, Battey, Campbell, Whittaker, Reamy, Yandell, Kinloch, Conner, Reeve, Fenger, Geddings, Hardaway, Engelmann, Hyde, Lyman, Hosmer Johnson, and Byford. Amongst the foreign delegates the conspicuous absentees were equally marked, and on all hands were heard involuntary inquiries—where are Sir James Paget, Virchow, Jenner, Pasteur, Bryant, Verneuil, Gull, Volkmann, Lister, Jaccoud, Spencer Wells, Esmarch, Playfair, Ziemssen, Holmes, Charcot, Liebermeister, Mackenzie, Koch, and Erichsen? All these, and more, whose presence had graced, and whose labors had given dignity and importance to previous Congresses, were painfully missed.

Precisely at eleven o'clock the curtain rose upon a sylvan scene and disclosed the President of the United States seated in the woods at a small table, with the Secretary of State on his left and Speaker Carlisle on his right, who modestly endeavored to conceal his identity behind a very tall white hat. Grouped around them were some fourteen or fifteen members of the Executive Committee and distinguished foreigners, each one decorated with a little silver medal on a background of crimson ribbon. As the curtain rose, the audience greeted the Chief Magistrate with the heartiest applause.

The Chairman of the Executive Committee, DR. H. H. SMITH, of Philadelphia, stepped forward from the right wing and introduced the President of the United States, who was received with all the enthusiasm befitting the occasion. He rose promptly and opened the Congress in a few sonorous and well-delivered sentences, and on ending gave a sharp tap of the gavel on the table before him.

When the nominations for Vice-Presidents were subsequently read, embracing names eminent in medical science the world over, the suggestion involuntarily occurred to all that not a dozen were present of the entire list of nearly eighty distinguished foreigners upon whom it was proposed to confer this honor. This was so obvious that a delegate in the back part of the theatre, speaking with a strong Irish accent, said: "Mr. President, I would like to ask if it is proper to elect men as Vice-Presidents who are not present? I would move to amend"—— Here President Davis interposed and said: "It is hardly in order to interrupt the proceedings now, because it is impossible to know who will be here. The gentlemen who have been named have all been communicated with and have accepted the positions, and I declare them elected."

This cutting of the Gordian knot was received with due applause, but when President Davis sought to follow up his victory by inviting the Vice-Presidents to step upon the platform the force of the objection was apparent, as, after a painful pause, only one Vice-President, Dr. Phillips, of London, disclosed his presence. He made his way to the stage, and Dr. Davis hurriedly remarked that it was not necessary to delay the proceedings by waiting for the other gentlemen.

Secretary General Hamilton's report was brief and pointed, and noticeable chiefly for the cleverness with which it skated over the points of difference in New Orleans and Chicago, which had played so prominent a part in the fortunes of the Congress.

The address of welcome from the Secretary of State, Mr. Bayard, was scholarly and graceful.

The replies of the foreign delegates were the most interesting feature of the meeting. The first call made by President Davis upon the English Deputy Surgeon-General received no response. Dr. William H. Lloyd, of the Royal Navy, was then appealed to, and with some nervousness he gave response in unmistakable English accents. Dr. Léon Le Fort, portly, dignified, and gray-haired, responded briefly, on behalf of France, in his native tongue. Professor Unna, a dermatologist, selected to respond for Germany, replied in German. But the distinguished representative of Italy, Professor Semmola, whose appearance, graceful gestures, and artistic vocal inflexions, reminded many present of Léon Gambetta, answered in French, and with force

and fluency. The Russian representative, Professor Reyher, spoke briefly and quaintly in broken English.

The opening session ended with an inaugural address from Dr. Davis. During its delivery the galleries had emptied, and many had departed from the body of the meeting. At its close, President Cleveland, Secretary Bayard, and Speaker Carlisle successively shook President Davis by the hand, and the first day's proceedings were declared at an end.

An unpleasant episode occurred in connection with the responses of the foreign delegates which has created much talk. It appears that Prof. Durante, of Rome, was requested by the Secretary-General of the Congress to respond on behalf of the Italian members, and he accordingly prepared an address, and called upon Dr. Hamilton to inquire about the hour he would be expected to deliver it. Dr. Hamilton then informed him that Dr. Semmola, of Naples, would respond to Secretary Bayard, as he claimed the right, as a representative of the Government of Italy, and the Committee felt constrained to concede it to him. Within an hour Prof. Durante sent the following note to Dr. Hamilton :

Secretary-General of Medical Congress :

Having been invited by the Secretary-General of the Medical Congress, Surgeon-General Hamilton, to answer, in the name of my country, the address of the Secretary of State, I accepted with pleasure and so informed, by letter, the Secretary-General. My surprise was, therefore, great and painful when this morning, while inquiring about the order of exercises at the opening of the Congress, the same Surgeon-General Hamilton informed me that he had requested Dr. Semmola, of Naples, to make the answer.

This change was done without my knowledge and consent, and was, therefore, an insult. I am the representative of the Italian Government, inasmuch as I was delegated to this Congress by the Minister of Public Instruction, the only Minister that has authority to make such an appointment. Prof. Semmola's appointment is not from the Government, but from one Minister—that of the Interior—as an expression of personal regard. The plea that he is a Senator of the kingdom should not be considered in this matter, as this is a medical and not a political Congress. In view of the foregoing and of the personal affront, I hereby withdraw from the Medical Congress aforesaid.

FRANCESCA DURANTE.

This episode, however, was finally settled through the earnest efforts of Dr. Hamilton and others. In response to a letter from Dr. Hamilton a note was received from Dr. Durante on Wednesday in which he said : "I thank you for your explanatory and very kind letter and, although I feel that my position as the representative of the Italian government would, under the circumstances, suggest my withdrawal from the Medical Congress, the kind disposition of yourself and of the officers of your committee toward me and my country overcome my sense of offended dignity and lead me to respond to your kindness by remaining and participating in the proceedings of the Congress."

To make the reconciliation more complete it was determined that Dr. Durante should preside at the General Meeting of the Congress on Wednesday, at which Dr. Semmola was to deliver his General Address. On the conclusion of the Address Dr. Durante and Dr. Semmola shook hands very cordially.

WHAT PROMINENT MEN SAY OF THE CONGRESS.—DR. N. S. DAVIS said to a representative of THE MEDICAL NEWS, on Thursday evening, in reply to the inquiry whether he thought the Congress had been a success, that in point of numbers it stood second, if not first.

"But as to its character and the scientific value of its work ?"

"Well, I have seen all the presidents of Sections today, and they each and every one of them report most favorably."

"From your experience of previous Congresses, do you not think there was a conspicuous absence of distinguished foreigners—such men, for instance, as Paget and Gull, and Pasteur and Verneuil, and Virchow and Lister, and others whose names are known all over the world ?"

"Yes, that is so ; but then you must remember that many of those you name are over seventy years of age, and at their time of life, and with their professional duties, a journey across the Atlantic, and such a prolonged absence as is thereby implied, is a very serious matter. Sir James Paget himself told me he feared he would be unable to attend on account of his advancing years. Professor Virchow wrote me that he could not come because of an important conference to be held in Berlin this month, of which he is Chairman of the Committee of Arrangements. I do not remember exactly what that conference was, but it was something combining hygiene with some other subject."

"But what about Neudörfer and Lutaud, of Paris, who were to have been here and to have taken part in the proceedings ?"

"Neudörfer is detained by sickness ; and Lutaud—well, I can't say anything about him."

"Then, on the whole, do you think the delegates compare favorably with those of other Congresses ?"

"Yes, I think so. They are younger men, true, but I understand some very valuable papers have been contributed even by those who did not come. M. Simon, for instance, a very eminent man I am told, has forwarded a most important paper. And you must remember we have had difficulties with regard to the foreign delegates."

"What were those ?"

"I do not care to go into them, but, gentlemen—you could count them on the fingers of your two hands—have written and begged foreign delegates not to come. They said there were factional differences. They even went so far as to say that Washington was unhealthy ; that the weather was very hot, and that typhoid fever was prevailing. Of course, this kept some away."

"How do you think the American reputation for hospitality has been maintained ?"

"That I would rather say nothing about. I have heard many complaints from the foreign delegates that they were not able to get into the White House to see the President and Mrs. Cleveland last night—many such complaints. It was unfortunate, very. I am very sorry it occurred."

"Is there any prospect, do you think, that the Congress will ever meet in the United States again ?"

"Not for twenty years at least. These sessions are only triennial, and it is not likely that Washington's turn will come round again for twenty years, if then."

SECRETARY-GENERAL JOHN B. HAMILTON was asked how many delegates have registered.

"Over twenty-six hundred."

"How many foreigners?"

"Three hundred it is estimated, but I have not the local registration-book at hand."

"Have you been cramped for want of money?"

"Yes."

"If the dissension beginning at New Orleans had not taken place, do you think there would have been a larger contingent of foreign delegates?"

"If there had been no system of general misrepresentation practised by many of those who resigned and followed up by personal solicitation to stay away the attendance might have been larger; as it is, the attendance from transatlantic countries is larger than it was at former Congresses."

"Do you know of any dissatisfaction having been expressed by foreign delegates as to their treatment here?"

"No, on the contrary, see Sir James Grant's speech to-day, on this point."

"What do you think of the scientific aspects of the Congress?"

"They are entirely satisfactory, and will take rank with any former Congress. I can only view with contempt the statements made with evident intent to disgrace America and belittle our guests."

"What about the absence of those American physicians who withdrew from the Congress, and remain away?"

"While their absence is to be regretted, yet the facts show the Congress is entirely successful without them."

DR. UNNA, of Hamburg, being asked "What opinion he had formed of the Congress?" replied:

"I do not think it is of as high a character as those of Copenhagen and London. The discord at home has prevented many foreigners from coming. This discord was so prominently heralded abroad that it became in a measure international. If it had not occurred many Germans would have come, not thirty or fifty, but two hundred. This number would have included the most prominent men of the country. I regret that the leading physicians of America did not overlook the discords when it was too late to reconsider action, and so give to the Congress more of the air of being international. Men like Agnew, Loomis, and others are much missed. My strongest impulse in accepting the vice-presidency, and reading a paper, was to prevent the Congress from dwindling into simply a national affair. I regret that others did not take the same view. The scientific aspect, although not equal to former Congresses, is better than was to be expected under the circumstances. Papers in the Dermatological Section were good for the most part, but the discussions were poor; but such is the case at all Congresses. Socially I have not had much personally to complain of, although I am aware of many deficiencies. I know that many errors have been committed. The arrangements have been poorly announced. On the whole, there is much that is to be regretted."

DR. W. T. LUSK, of New York, was asked what opinion he had formed of the Congress.

He replied, "I have heard some complaints from foreign delegates regarding a want of courtesy on the part of the officers of the Congress. It seems there has been some want of business management, and perhaps a lack of experience on the part of the officials in managing such affairs. They have been too much disposed to regard the foreigners as they would our own people, who are always willing to look after themselves, while a European seems to require some one to take care of him."

"What do you think of the scientific value of the Congress?"

"I believe the volumes of Transactions, when published, will be equal in respect of the papers contained therein, to those of any preceding Congress."

"If the unfortunate dissension which began at New Orleans had not occurred, would not the success of the Congress have been more marked?"

"Well, I must say the presence of prominent members of the profession at the discussions was greatly missed."

Dr. Lusk, who was somewhat unwilling to give his views for publication, also stated that he thought that in the division of papers between the Sections of Obstetrics and Gynecology, the former had been unfairly treated by being deprived of several papers properly belonging to it. For instance, a paper on Cæsarean Section, and another on Extrauterine Pregnancy, had both gone to Gynecology, instead of to the proper section—Obstetrics.

DR. MARIANO SEMMOLA, Professor of Therapeutics in the University of Naples, Italy, was asked his opinion of the present Congress, and replied to the queries addressed to him as follows:

"You have attended other Congresses?"

"Yes, indeed I think I have attended every one."

"What opinion have you formed of the scientific value of the Congress?"

"It is considerably below the average of any of its predecessors."

"Do you think that if the unfortunate dissensions at New Orleans had not taken place that a larger number of distinguished men from Europe would have attended this Congress—such men as Porro, from your own country, and Pasteur, Virchow, Esmarch, Paget, MacCormac, etc.?"

"I have met many, if not all those gentlemen at preceding Congresses, and have no doubt at all that if there had been no quarrel among the profession here, some, if not all of them, would have crossed the Atlantic."

"How did you happen to come yourself?"

"I was assured that the quarrel was a matter that had entirely passed over, and so I came on."

"Have you met many of the Americans whom you expected to see?"

"Very few indeed, and it is a matter of sincere regret to me."

"How have the social aspects of the Congress appeared to you?"

Dr. Semmola smiled at the question, shrugged his shoulders and said: "Well, I have had one or two private invitations, but as for the rest—it does not exist."

"You are not favorably impressed then?"

"No; how can I be?"

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DERMATOLOGY IN ITS RELATION TO GENERAL MEDICINE.

An Address delivered in General Session, September 7, 1887.

BY DR. P. G. UNNA,
OF HAMBURG, GERMANY.

IF a specialist is permitted to speak from this exalted place to the representatives of the medical world in all its branches, and desires to remain within his special domain, properly speaking, *one* subject only, viz., he has the relation of his specialty to general medicine.

The true specialist, he who, from pure enthusiasm for his profession, has left the ordinary path of medical practice can travel only one way. Theoretically, and possibly also practically, instructed in all branches of medical science and art, he will devote his entire life to the double object of planting seeds, gathered from the immense field of general medicine, into his special soil, in order to return gratefully to general medicine his harvest—as a ripe fruit. From this point of view, gentlemen, let us consider to-day, the relations of dermatology to general medicine. Let us lay aside all those trifling external circumstances which ordinarily are advanced as an excuse for the existence of special branches. We will forget that the specialist may and must acquire in his small domain, more extensive knowledge, and greater skill than any one engaged in the entire field of medicine. This circumstance which, with iron necessity, has created specialism, is also the one which forever separates it from general medicine. Let us make use to-day of the pleasant fiction that the specialist is created from the growing and ripening conviction of the eminent physician and naturalist, from the ideal wish to enlarge the boundaries of knowledge of nature. Our eye will be sharpened at once for that which connects it with general medicine forever,—*i. e.*, for the interest which general medicine has, on its part, to desire in future the disconnected special culture of individual branches of science and to favor the same.

I consider my task for to-day accomplished, if I should succeed in convincing you that general medicine, that every practising physician, has a great, an ideal interest in this, that dermatology may be cultivated in a manner far more earnestly and extensively than heretofore, by the greatest possible number of workers; that this young daughter of medicine is worthy of such special attention and favor, and will reward the mother for all the trouble spent in its culture.

Dermatology is indeed a young science, not as if for centuries worthy or unworthy laborers had worked in its structure, too large a number of isolated cases, preliminary systems, and names without number testify this. But considered as a science, dermatology has in the course of the present century, not left the stage of continuous fermentation, of never-ending reconstruction. In vain are dermatologists longing for a place of rest, for quiet development, such as has been accorded to ophthalmology since the labors of such men as Helmholtz, Donders, Gräfe. Every important new fact arising in the field of dermatology is liable to shake the entire structure of the present time, and to remind us of its frailty. And is this science, characterized, in spite of practical success, by theoretical insufficiency and constant changes, to bring to general medicine the promised fruits? I hear the question in astonishment, and yet I must reply: Yes, and how paradoxically it may sound, for this very reason. The causes opposed to the development of dermatology are based upon the same circumstances which in future will become of so much value to general medicine.

In no other branch of medical science are observations made so easily, but also defined with such difficulty, as those presented by the skin. The confusing polyformity of processes manifesting themselves externally is sufficient to explain the slow progress of scientific dermatology. As it is far easier to distinguish the qualities of a fluid when it drips slowly as from a filter, than when flowing *en masse* in an open canal, so the isolated symptoms of a skin disease will readily vanish in the contemplation of the entire field. Investigation of diseases of the kidneys by the examination of the urine, of lung diseases by examination of sputa, of diseases of the digestive tract by examining the evacuations, may be compared to the minute but accurate observation of the water drops in the filter.

Attention is simply directed to variations of symptoms, the knowledge of which is easily obtained, as well a the deductions as to the condition of the internal organs; this does not imply much, yet it is safe. A more thorough knowledge of internal organs we obtain by gradual and successive combination and comparison of large series of single observations, a slower process, but steady and satisfactory, and yet remaining imperfect. What results would, for example, arise from observations made on the kidney in different forms of nephritis, where at present we are reduced to speculative examination of the urine and the results obtained at autopsies! If this were sufficient, many controversies might be decided by simple observation. This hypothesis presupposes, however, that the symptomatology of the organ has already attained the same high degree of perfection as has the examination of the urine; if this had not preceded, if the questions were not already formulated, the surprising manifoldness of the picture would irritate as much as ever-changing symptoms in skin diseases impress most physicians, conveying the very contrary of a clear view.

We now arrive at the conclusion that it would have been better, in the interest of dermatology, if in the study of isolated symptoms, of secretions and excretions, for

example, the entire complex of symptoms had not been exposed. The minor exposition would have been examined by means of the auxiliaries physics and chemistry; many questions would have been suggested and answered speculatively, and the main questions brought to a point, so that by the removal of the veil from all processes, our eye would have been concentrated upon those points where questions of pathology of the skin are involved, and simple observation would decide at once yes or no. Yet this is Utopian. In the diseases of the skin we suffer from an oppressing mass of symptoms and have to contend with them. We have no mechanical filter presenting to us, drop by drop, single facts, we have only a mental one in the eagerly directed attention to a single point, and knowledge penetrating more and more into the finer structures of the skin. We shall overcome, working on step by step, the disturbing influences of the multiform external picture. No organ of the body, except the central nervous organ, which partly represents features of the external skin, exhibits so many topographical differences. One segment of the liver presents, in its external structure the same features as any other one, any section of it presents gall ducts and parenchymatous cells, connective tissue, bloodvessels, and nerves.

Let us examine such a complicated organ as the kidney, or the eye; there we have indeed contrasts of cortex, marrow, papillæ, but they repeat themselves in every segment in the same order. Even the eye, if I may compare it to a mechanism, is, like the kidney, approximately of symmetrical radiary construction. The skin, however, presents, like the central nervous system, only bilateral symmetry, and in each of the symmetrical halves we have large series of regions entirely different in structure: either hairy or hairless, rich or poor in muscle, with thick or thin panniculum, more or less provided with terminal nerve apparatus, such which have both sebaceous and glomeriform glands, and others with glomeriform glands only, with thick or with thin stratum corneum, with perfectly developed papillary layer and without it, with equal or unequal degree of diversibility, with acid or weak alkaline reaction of secretion; the skin of extensor and that of flexor surfaces, free surfaces and others of contact; the *cutis vera* and its appendages. A large series of skin affections is changed through such topographical differences to such a degree that it requires a long study in order to conceive the relationship of such affections.

An old example of this is porrigo, tinea, teigne, known still to-day in France and England as an isolated designation of disease of the hairy scalp, which originally were really used for as many peculiar diseases. As a modern counterpart may be mentioned the three diseases of impetigo simplex (Wilson), of sykosis simplex, and of furunculosis, which, according to Bockhart's researches, are caused by the known white and yellow staphylococci, according as the surface of the skin upon which they occur is covered by lanugo, by thick hair, or as the cocci find a good soil in the glands. The most important example for pathology is, however, that of the different forms of tuberculosis of the skin. We have on the hands and feet the relatively harmless species of papillomatous lupus, beginning as an anatomical wart and healing in its centre, progressing very slowly with peripheral papillary excrescences. We have tuberculous lupus and the very different sclerotic lupus; the former mostly appearing on the face, trunk, and upper extremities. There is the tuberculous lymphangitis of the skin, with the so-called tuberculous gumma and bubonuli, which lead to tuberculosis of neighboring lymphatic glands; further, the entirely flat lupus upon such cheesy glands if destroyed by ulceration; and, finally, at the termination of the tuberculous drama in the perfectly exhausted skin, those ominous tuberculous ulcers at the introitus of cavities, appearing in the lung and intestines much earlier. As many different forms of disease are presented by the lichen process, according to the degree of participation of the different parts of the skin. The modification by localization in the leg of the different skin diseases is known.

But enough of these examples; they demonstrate that we have to filtrate, as it were, the topographical, macroscopical, and microscopical differences of the normal skin from the manifold picture of a case before us, if we desire to arrive at an exact diagnosis. This is of special importance in those dermatoses which are localized in an unusual manner—*e.g.*, in an extragenital chancre; in a circular spot of lichen or psoriasis of the genitals, of a sykosis of the hairy scalp, in pointed condyloma of the capillitium. Another variety of skin disease depends on the typical change of symptoms in their course. This cause of polymorphy has produced historically most of the confusions, and continues to be a source of misunderstandings. The great dermatologists of modern times, Plenck and Willan contended with this difficulty without overcoming it. Their systems are attempts to embrace in the clinical forms of exanthems the true pathological types; and they knew, as appears from Bateman's preface to Willan's manual, that this one-sided presentation of the forms of efflorescences, for the object of classification, does not correspond well with the changeable character of most of them. They preferred, however, from practical reasons to give preference to this classification, which was based upon symptoms attracting the senses, and they were right. They did not imagine how much the future would rearrange in detail their order and reclassify it, partly through the discovery of finer anatomical distinctions, which rendered grouping untenable, as in lichen pilaris, lichen urticatus, lichen tropicus, and partly because it recognized remote forms of disease as a single one, as impetigo sparsa, and porrigo larvalis as eczema.

At this sore point of the older system, Hebra, the older, applied his critical lever; his clinical penetration permitted him to discover types of diseases even where entire series of different efflorescences make their appearance in the course of the process. The idea of eczema was considerably enlarged by the adoption of apparently heterogeneous forms of disease, to such a degree that the entire period after Hebra, according to the favorite diagnosis of the time, might be called the period of eczema, as there was previous to this one a period of scabies, and still earlier one of lepra. With the same excellent clinical instinct, Hebra limited the idea of lichen and of impetigo, and made, on the contrary, these diseases exclusive representatives of a distinct, anatomically definable efflorescent type. He thus overcame intuitively, without being a master of the anatomy and physiology of the skin, many difficulties, which the protean nature of many dermatoses had prepared for

his predecessors, but he has left to us, still, the task of classifying many new and well-known skin diseases.

External influences produce, as is well known, the most numerous variations in skin disease, and in no other organ are they, as a matter of course, of such importance as in the external integument. While formerly ths causes of external injurious effects which were considered of greatest importance, were generally regarded as mechanical, rarely as chemical, but at the present day these, although important factors, must give place to living parasites. If we know now with certainty that the normal epidermis in its horny layers is the nidus of an entire series of saprophytes, then it is a necessary consequence, according to what we know of the habit of such organisms, that the morbid epidermis provides a still better abode for ordinary saprophytes and a soil generally more favorable for the aggregation of true parasites, especially when the epidermis is abnormally moistened and contains decayed elements, pus cells, etc.

If mixed infections have a greater share in the production of diseases of internal organs than was heretofore believed, and if many deviations of the type of internal diseases prove to be, by accurate bacteriological investigation, secondary bacteriological invasions, we must assume *a priori* that in the exposed skin a secondary immigration of parasites forms the rule. This is confirmed, in fact, the more we collect experience in this direction. In most infectious diseases—*e.g.*, those invading the external integument, as variola, varicella, morbilli, and scarlatina—we have become acquainted with up to the most recent time such secondary invaders only, not, however, with the bearer of the poison proper. Perhaps we meet in van der Loeff's amœbæs, in Pfeiffer's sporozoides—the genuine parasite of smallpox-like diseases. All cocci found in smallpox only served to explain the puriform, secondary softening of the pox. We shall certainly have the same experience in many skin diseases. There is no doubt that, in acne vulgaris, the formation of comedones on the one hand, and the purulent inflammation of the follicle on the other, represent two processes internally absolutely foreign, externally simply combined, but existing independently of each other.

We observe that an originally purely nervous eczema, whose zoster-like vesicles on a previously healthy skin have suddenly sprung up, as in the dentition eczema upon the cheeks of the infant, after some time, begins to creep on like herpes tonsurans, instead of jumping over to remote parts of the skin in the track of nervous reflexes, as its nature demands. There is, then, no doubt that on the moist basis of nervous eczema, a parasitic—*e.g.*, seborrhœic eczema, has taken its seat, which now assumes the leadership, and dominates in the form of the disease. The joining of carcinoma in lupus is not otherwise to be explained. Even processes which we have been in the habit of considering as normal phases of well known dermatoses, as the suppuration of the zoster vesicles, have to be reduced to secondary infections. If we paint a beginning zoster immediately with iodoform, or some similar drug, the vesicles will develop as usual, but remain clear, the normal suppuration is suspended, and in the contents of the vesicles are found Pfeiffer's amœba-like organisms. How much more must we expect mixed infection where skin affections do not meet our eye in their typical forms.

In this is the next, most pressing task of the future; bacteriological analysis of skin diseases is, perhaps one of the most difficult of all bacteriological studies, but it is also one of the most interesting, and it does not require the gift of a prophet in order to see it develop from this study the germ of an entirely new conception of skin diseases in general; for clinical causes demand that we assume the parasitic origin of a larger number of dermatoses than many practitioners and colleagues of to-day are willing to admit.

Next to mixed infections are to be considered numerous external injuries, of mechanical, physical, and chemical nature for skin diseases. Let us simply think of the effect of cold and heat, of the variation of eczema in covered and uncovered parts of the body, in places which may be reached by the scratching finger and those remote from it, of the manifold peculiarities produced by the occupation of the patient, which can hardly be calculated in their extent; let us remember the complications produced by tight, rubbing, and compressing garments and ornaments on the affected skin, which may transform harmless eczema into dermatides accompanied by œdema, sugillations and vesicular formations. Let us pass before our minds the immense number of external and internal remedies which, in not desirable effect on the skin, give it an entirely new appearance, from arnica up to coal tar and chrysarobine. These external influences are so great, and admitted to be for so a long time, that the maxim was formed, under such circumstances confusing diagnosis, to permit the skin, under a protecting cover, to reflect the true nature of the affection.

Diametrically opposed to these external influences are the rarer but more difficult effects of internal nature, which must be ascribed to the individuality of each patient. Psoriasis and lupus vulgaris belong to skin disease easily diagnosticated, and yet there are individuals whose skin reacts upon these causes with such peculiar phenomena of irritation that extraordinary difficulties present themselves in diagnosis and treatment. The greater liability to these individual varieties is furnished by diseases under the influence of nervous affections: the simple nervous eczema, dermatitis herpetiformis (Duhring), varieties of herpes, erythema multiforme, and urticaria. Deviations from the ordinary type are observed in these instances, which threaten to displace and erase the character of members of this group, rendering exact diagnosis difficult. Disturbed circulation and cyanotic discoloring of the hands of working people may change existing eczema so considerably in appearance that even experienced physicians err in their diagnosis. The dermatologist has to make it a rule to himself, in rare affections, to examine the general constitution of the skin—above all, the circulation, the function of glands, and the condition of the epidermis—before he proceeds to the study of the morbid skin. And yet the causes of the varieties of skin diseases are not exhausted.

We have not spoken yet of those varieties induced by age and sex, country, climate, seasons, and race. The separate position of some skin diseases in children, compared with corresponding affections in the adult, is familiar to every practitioner. Every American physician knows of the great difficulties presented by the different pigmentation of races in the diagnosis of skin dis-

eases. I fear to tire you by entering more intimately into these points, and desire simply to point out in a few words the different *genius endemicus* of dermatoses in different countries, zones, and continents, and to the changing *genius epidemicus* in the same places. Lichen ruber acuminatus, Hebra's prurigo, are diseases almost unknown in America, as well as in England and France, in the place of which we have lichen planus and an eczema related to prurigo. Patients suffering from prurigo, transferred from the European continent to England and America, recover without medical aid more completely than they would at home with the best attention. There appeared in Hamburg, some years ago, a perfect epidemic of lichen ruber acuminatus, and disappeared again. At the present time there prevails there eczema seborrhœicum above all other eczemas, even psoriasis. Sycosis parasitaria slowly advances and diffuses, with herpes tonsurans of children, from England and France into Germany. But a few years ago the former was unknown in Vienna. The effect of tropical climates upon skin affections, especially eruptions caused by excessive sweating, has not been studied sufficiently. We shall probably meet here frequently old acquaintances in foreign dress and new names.

These scanty indications may suffice to prove that the study of the skin has to be an ethnological, climatological, and geographical one. By such comparisons we are, on the one hand, protected from the one-sidedness of some of the schools in different countries, and on the other, we obtain, by the collection of dermatological experience in all countries and zones, an extensive picture of the complete pathological functions of the skin.

In these facts, gentlemen, is embodied the explanation or, if you wish, the excuse that dermatology as a science has not yet attained the same high position of absolute knowledge as ophthalmology, or obstetrics. The complicated structure of the skin and its exposed position, render difficult an analysis of what is observed and will continue to make difficulties in the future.

More deductions may be made from these facts: We are in the first place directed with pressing necessity to minute analysis of the several symptoms of skin diseases, the first condition for a better understanding of skin diseases *per se*. This exact study of a single symptom, *e.g.*, function of perspiration, or of nerves —with all the auxiliary assistance rendered by physics and chemistry, by histology and experimental physiology, through all the regions of the skin, in all ages, in the normal skin of men, and in the greatest possible number of animals, in different morbid processes—that is what we want, and which we have heretofore had to do without almost entirely. Not the description of any new, heretofore unknown, skin disease is at present our most important problem, but the most penetrating understanding of the most common daily affections, like eczema, acne, and psoriasis. Strict analysis of the most usual symptoms must and will finally lead us to a firm basis of facts, accepted by all colleagues, and upon which a uniformly accepted pathology of the skin willarise.

We are then no longer, as in the times of Hebra, reduced to the clinical instinct of a single genius, but hundreds of active workers will successfully coöperate in building the common, solid structure. Then the faith in authorities will cease, and we shall not be compelled to explain to other professional brethren the mysteries of dermatology, but explain its facts. The divided national camps and schools among dermatologists will disappear, and it will be impossible to designate the same disease in Europe as a fungoid, and in America, or France as a constitutional disease of the blood. Then we shall do away with the rubbish accumulated during centuries, the superstition of the people and of physicians, which in spite of the glorious efforts of the Vienna school, still presses like a night-mare upon the unprejudiced study of skin diseases.

But this strict and minute analysis of all symptoms to the greatest extent will not benefit dermatology only, and this is my second deduction, but pathology in general. These two circumstances, complexity of the organ and its external position, rendering, on the one side observations difficult, make on the other side that which has been observed of importance for the entire pathology. The skin will become the touch-stone for every pathological theory of the future, far more so than the experimental organ in experimental pathology and therapeutics of the future. The eye only contests, in clearness of observation, with ex-perimentation on the skin, which is preferable as regards the animal body in most cases. For experiments in men we are reduced almost exclusively to the skin, and the few bacteriological experiments in this direction by Fehleisen, Garré, Bockhart, and others, have led to perfectly satisfactory, and explicit results. If all the parasites of the skin and their conditions of life were known to us, and we had learned their extraordinarily different pathological effect on the skin, from this limited chapter of experimental pathology and therapeutics a bright light would be shed upon the more obscure analogous processes of disease and treatment of internal organs.

The contest *pro* and *contra* concerning the trophoneurotic theory of disturbances will naturally be decided through the skin; the safe and broad basis of this theory was created by the eminent work of the American physicians Weir-Mitchell, Moorehouse, and Keen, during the War of the Rebellion. For observations of circulatory phenomena the external integument is indispensable, and especially for the sporadically appearing, and equally rapidly disappearing phenomena, only seen in the skin, like the angioneuroses, *e.g.*, urticaria. It is possible, even probable, that in other organs, *e.g.*, in the central nervous system, and in the mucous membrane analogous disturbances exist, which, as they never appear on the post-mortem table, can only be observed by means of the analogy of similar symptoms of the skin. The true nature of these skin diseases, heretofore treated by experimental research in a superficial manner, has certainly great value for general pathology.

I believe that these deductions are self-evident to such an extent that I need not prolong this connection of ideas. The entire pathology in the main, as the theory of inflammation and of tumors, has proceeded from skin symptoms; and it is still in every new definition of inflammation, the final touchstone, whether it can explain the four old cardinal symptoms: tumor, calor, rubor, dolor, originally applied to inflammation of the skin.

I would like to refer briefly to experimental therapeutics, to this interesting science of the future, the results of which have to supply or to confirm empirical

therapeutics. Numerous experiments on animals are considered to-day as the condition of recommendation of a new remedy supplied by chemistry, and yet we can make very rarely a final conclusion from the toxicological experiment in animals upon the therapeutical effect on man.

Experiment on animals is, however, not the only safe way to attain therapeutical knowledge. History teaches us quite a different road, viz., from the bold external to the careful internal application. The internal application of mercury was dreaded in antiquity. Dioscorides admonishes us expressly against its use. But when, at the end of the fifteenth century, with the appearance of syphilis, the mercurial ointment cure became popular, and by laymen more than by physicians was profusely applied as a remedy, occasional and isolated applications of its internal use occurred. In the beginning of the sixteenth century, pills containing mercury and turpentine, of the pirate Hayreddin, were in favor. At the end of the sixteenth century, with the mercurial ointment cure approved by physicians, internal mercurial preparations were administered. The balsam preparations had certainly already made this passage from external to internal applications, in antiquity. Well, this way is open to us to-day.

In illustration, I will quote an example from my own practice. I was experimenting with a sulphur remedy, which has received the name of ichthyol among laymen, in different skin affections, and found, among others, that in diseases of a distinctly nervous nature—*e. g.*, in certain nervous eczemas—it produced surprisingly good results by external application; I also found, however, that in continued external application this good effect changed to the opposite, and the idea then suggested itself to apply it internally in these affections; here I found its effect constant and satisfactory; it appeared that the domain of application of ichthyol, with respect to skin diseases, agrees partly with that of arsenic, but disagrees for the most part. In further experiment it surprised me as well as the patient, that certain complications of this eczema, especially nervous bronchial asthma, likewise disappeared under the use of ichthyol. Was it not natural when, later, other cases of bronchial asthma, not combined with eczema, were treated in the same manner, and the good results justified this supposition, that I considered ichthyol as one of our best remedies in bronchial asthma in general, and place it at the side of iodide of potassium. In a similar manner I have, proceeding from the skin, found the good qualities of this remedy—known to physicians—in chronic catarrhs of the stomach and intestines, and in chlorosis.

There is, therefore, an innocent, safe way for therapeutical experiments, which are not performed on the body of an animal, but the human skin, and as this tissue is, under proper treatment, very tolerant, I anticipate a large series of therapeutical acquisitions gained in this way. I expect not less beneficial effects from progressive dermatology or the future of surgery. Our specialty is properly situated between internal medicine and surgery, and bridges the wide chasm of both; sharing with internal medicine the gain of therapeutical effect, with surgery more the benefit of immediate diagnosis.

If we dermatologists have learned in general from modern surgery the blessings of the antiseptic method, in a limited sense, and the significance of the passive method, excluding all injuries, the time will come when surgery will long for a more active interference in surgical therapeutics, and then it will have to befriend itself with the results obtained by modern dermatology, which constantly studies the direct effects of chemical and physical agencies upon the tissues. The iodoform dispute of recent times has demonstrated that some surgeons still regard as identical the theories of antiseptic remedies, in the stricter sense, and surgical remedies in general, while according to our opinion antiseptics form only one part, an important one indeed, of surgical remedies. Iodoform has been saved this time, but even if all surgeons had turned away from it from fear, because iodoform does not destroy cultures of Staphylococcus aureus, we dermatologists would have continued to disinfect our soft ulcers with it and to esteem it highly, until a proper appreciation of the blessings of iodoform and the unimpeachable reasons for its being held in high estimation had been found by surgeons.

Permit me also here to give an example from my personal practice. We dermatologists, as well as physicians and surgeons, have to contend with one form of tuberculosis; viz., lupus. It may be a valuable direction to surgeons, that among all other local antituberculous remedies, above iodoform, pyrogallol, ichthyol, lunar caustic, salicylic acid has been approved, in pure form, as plaster-mull, or as a high per-cented salve, but especially the less painful mixture of salicylic acid and creasote. In tuberculosis of lymph vessels and lymph glands salicylic acid is equally excellent; whether it be for that of bones, further surgical experience must teach us.

I hope, gentlemen, that continuing this train of ideas, you will agree with me that the promotion of dermatology, as a special science, is in the interest of general medicine, in the interest of the naturalist, as well as in that of the practical physician. Such a promotion I see already in the increase of young practical physicians, who devote themselves with ideal enthusiasm to this branch, and happily there is no want of them at present. But essential encouragement ought to proceed from the Government and Universities. In France and England the entire burden of scientific research in this branch rests upon the shoulders of physicians and surgeons, who, simply from love for this branch, have devoted themselves to its special promotion. By special institutions this want is provided for in increasing extent in Russia, Germany, Italy, and the United States. Nowhere are so many chairs occupied by eminent savans in our branch as here in the United States, and yet the means for real progress in our specialty are not sufficient. The objects are so manifold, too confusing, too difficult for one individual, the extent of preliminary sciences to be acquired too extensive. Quite different results would be attained here by an association of investigators pursuing the same object, by a condensation of scientific means and methods, as they can be found only at a scientific central institution.

North America has, as no other country, produced citizens who have rendered themselves meritorious by founding rich scientific institutions. The first and oldest university of this country was founded, indeed, by a single man. A single American citizen will honor himself and

his country by the foundation of an institution, which elevates dermatology to the rank of one of the first medical branches, and, through it, places in view rich advances in general medicine.

ORIGINAL ARTICLES.

ON THE VACCINE OF YELLOW FEVER.[1]

BY DR. DOMINGOS FREIRE,
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In 1880, I announced that yellow fever was due to the presence of an extremely minute organism, found in the blood and deeper tissues, and also in the liquids of the secretions, which caused, by its evolution, disorders often fatal. Since that time I have continued my investigations with the view of proving the transmissibility of the microbe, and also that I might transform it into a vaccine by attenuation.

I have published papers on these different subjects and, also, a report entitled, "Doctrine microbienne de la Fièvre jaune et les Inoculations Preventives," in which I have condensed all my ideas as to the pathogeny and prophylaxis of yellow fever. Two of these papers were made with the collaboration of Messieurs Paul Gibier and Ch. Rebourgeon, both distinguished pupils of the eminent scientist Pasteur, who were good enough to associate themselves with me during the present year while I was in Paris. Recently, at Rio Janeiro, I have continued the same investigations with Dr. Sternberg, who was sent by the United States Government to learn the result of my work. I now only fulfil a duty in expressing my gratitude for the interest and unflagging zeal shown by this learned physician, as well as for the efficient aid which he has given me.

The theory which I advanced as to the nature and prophylaxis of yellow fever, is the first of a long series of experiments assiduously pursued for a period of seven years. I hope that this will justify my assured confidence in the facts which I have observed, not only with reference to the etiology and pathogeny of the disease, but also with regard to the practice of preventive inoculations proposed by me.

My present communication I will divide into several parts, so as methodically to embrace the somewhat miscellaneous remarks which I have to offer.

II. *Natural history of the amarillus microbe. Its classification, evolution, and cultivation.* I have rejected the kingdom of the protista in attempting to classify this microbe, preferring to place it among the algæ, on the authority of scientists like Robin and Littré, Germain, St. Pierre, and others.

In 1880, when I discovered the amarillus microbe, I named it the cryptococcus xanthogenicus, because it seemed to me to have the general properties which characterize the genus cryptococcus. Recently the genus micrococcus has been created to designate the cellular or ovoid microbes, which are the cause of many infectious and contagious diseases. Many botanists, as I am informed by Dr. Pizarro, the distinguished professor of botany and zoölogy in the faculty of medicine of Rio Janeiro, consider this genus micrococcus the same as cryptococcus, the difference consisting merely in the method of reproduction, in the latter it being by spores, while the micrococci reproduce by budding.

The amarillus microbe is found in a monocellular form, commencing as a round point, almost imperceptible even with a magnifying power of 700 diameters, the points increasing little by little, strongly refracting the light and soon showing dark zones when the light is reflected on them at certain angles. These little cells are circular (spherical), surrounded by a grayish or black border, and contain in their interior masses of protoplasm. Reproduction, as I have many times seen, is effected, as it seems to me, by the rupture of the enveloping membrane.

The laceration of each cell may occur at a single point simulating a budding, but almost always the enveloping membrane breaks irregularly at several points. On the flaps resulting from the laceration there are seen colored viscous masses to which the germ cells adhere.[1]

These masses attaching themselves to the débris of the destroyed cells are often arranged in an almost symmetrical manner, sometimes in the form of a pear, of a pine cone, or of a pineapple, sometimes like long and more or less flexuous chaplets. The microörganisms measure from one to one and a half micro-millimetres.

At the time of proliferation there escape from each adult cell two different pigments, one yellow, which infiltrates all the tissues and produces the icteric color which gives the disease its name; the other black, insoluble, destined to be carried into the circulatory current and to produce either capillary obstructions, or blood stasis in the parenchyma of organs. The anuria is occasioned, at least in great measure, as the microscope shows, by the accumulation of microbes and their débris within the urinary canaliculi, exciting there, by their presence, colloid degeneration which transforms each uriniferous tube into a solid cord and thus prevents the renal infiltration.

The black color of the vomited matters is due to this pigment. This seemed strange at first, but since the publication of my earliest investigations it has been found that there exists in nature a great number of microbes which have been called *chromogenic*, and have the property of manufacturing pigments of different sorts, the coloring being sometimes very striking. In support of this I will cite the dark blue pigment made by the bacillus cyanogenus, another beautiful reddish-purple color given by the micrococcus prodigiosus and the micrococcus indicus. Besides, the presence of these pigments has been confirmed by many physicians, among whom I will

[1] An abstract of a paper read in the Section of Public and International Hygiene of the International Medical Congress, Washington, September 7, 1887.

[1] I call these germ-cells spores. Even admitting that the micrococci can only reproduce by budding, each bud forming a nascent cell can, strictly speaking, be only a spore.

cite Drs. Rebourgeon, Issartier, and Prof. Artigalas, of Bordeaux.

Prof. Cornil, in his *Traite sur les Bacteries*, has reproached me for having shown, in the illustrations of my book, *Doctrine microbienne de la fièvre jaune*, masses of pigment, "for," says he, "these pigments are accidental corpuscles, and not bacteria." I know very well that these are accidental corpuscles, but it should not be forgotten that such corpuscles are correlated with the life of the amarillus microbe. Convinced that the observer has no right to correct nature, and repress what she clearly shows, I thought it my duty to place in my illustrations the pigments met with in cultures, especially as these same pigments play a very important part in the pathogeny of the disease, the two phenomena, icterus and black vomit, being the symptomatic expression of their presence in the organism of the patient.

Prof. Cornil himself has not been indifferent to the great interest which many attach to these pigmentary matters, for he mentions them several times in his treatise already cited, and has therefore repeatedly verified the pigments which I showed in my illustrations. I am happy to say that he has also confirmed the presence of the amarillus microbe in organs sent from Brazil. When I was in Paris about four months ago, I had the pleasure of receiving a visit from that illustrious scientist in the Laboratory of Comparative Pathology of the Museum of Natural History, where I was carrying out my investigations together with Drs. Gibier and Rebourgeon. We had an opportunity of showing him liquid and solid cultures made after the methods of Pasteur and Koch, and were able to satisfy him that coloration was invariably associated with microbes which, in his treatise, he reproached me with not having shown. On this occasion he was able to compare the microbe in the fresh condition, which he had not before seen, and the dead microbe stained with the hydrochlorate of rosaniline.

I have made perfectly successful cultures of the xanthogenic microbe in beef broth, milk, and gelatine solutions. I prefer gelatine solutions made, not with distilled water, but with ordinary water, because the latter contains different mineral salts and even some organic matter useful to the microbe. All the details with reference to my method of carrying on cultures are given in the first part (Chapter III.) of my report on the *Microbian Doctrine of Yellow Fever and Preventive Inoculations*, published in Rio Janeiro in 1885.

Besides Pasteur's method of cultivating microbes, I also used, with my microbe, Koch's method of solid cultures. Experiment has showed me that the amarillus microbe is easily stained, much more easily than many others, by aniline colors, such as the hydrochlorate of rosaniline, methyl-violet, and Bismarck-brown. In a brief paper presented a short time ago to the Académie des Sciences, we pointed this out, and Drs. Gibier and Rebourgeon showed colonies of the xanthogenic microbe stained a violet color and perfectly visible by means of a Verick microscope, eye-piece No. 3 objective, with homogeneous immersion.

We have, besides, succeeded in cultivating the same microörganism by means of the method of Koch. Placed in tubes containing gelatine which has been previously perforated by a sterilized platinum wire and charged with a little drop of culture fluid, the microörganism, kept at a temperature of from fifteen to twenty-five degrees, forms colonies which take the form of a nail, the head being on the surface and the point buried below in the gelatine. The gelatine liquefies little by little in an irregular manner, and the liquefaction always takes place at the superficial strata, which indicates that the microbe is aërobic.

The amarillus microbe has the property of elaborating products belonging to the class of ptomaines (leucomaines of Gautier) at the expense of the albuminoid and other matters on which it feeds. These ptomaines are very poisonous. I have made numerous experiments with them on dogs and frogs, experiments which show that these alkaloids have a remarkable influence on the sympathetic and pneumogastric nerves. Many symptoms of yellow fever will thus be plausibly explained by the profound disorders which these poisons occasion in the cardiac apparatus and the vasomotor nerves. In the cultures themselves these ptomaines are formed. Gelatine having a neutral reaction becomes markedly alkaline after the microbe has been in it a few days, and by well-known methods we can extract from these cultures, ptomaines similar to those found within the body in cases of yellow fever.

II. *Inoculability of the amarillus microbe. Its attenuation.* I have made a great number of inoculation experiments upon animals in order to prove the transmissibility of the disease. I have remarked that not only do inoculations made directly with blood and with virulent cultures kill rabbits and guinea-pigs in from two to ten days, but that the same result occurs when these animals are kept in an atmosphere more or less saturated with microbes. Many animals died simply from breathing the air of the laboratory where I made my experiments and autopsies. Their organs showed many specific microbes. I have placed the inoculability of the microbe beyond doubt by injections, both hypodermatic, intravenous, and intravisceral. I have made many series of experiments which I am happy to announce have recently been fully confirmed by Dr. Rangé, physician of the first-class in the French Navy at the Salut Islands, French Guinea. The account of these experiments was published in the *Archives de Medecine Navale*, last year.

The transmission of yellow fever from individual to individual by blood which was in the first place virulent, and which loses none of its virulence by passing through different organisms, shows clearly that the agent which produces the disease is not dead matter, but living, and susceptible of reproduction by successive transmissions. This agent can be nothing else than the only abnormal element of definite form constantly and invariably associated with undoubted yellow fever cases, that is to say, the micrococcus xanthogenicus. These direct proofs having put beyond question the parasitic and contagious nature of yellow fever, I applied myself to the study of the attenuation of the microbe so as to

change it into a product which might be used for vaccination.

We know that yellow fever, except in very rare cases, attacks the same individual but once, a characteristic found in almost all transmissible diseases of a virulent nature. If we succeed, however, in attenuating the cultures of the xanthogenic microbes so that they produce only such slight disturbances and changes of composition in the blood and in the tissues as will confer immunity, we shall then obtain for yellow fever the same great desideratum which we have already obtained for smallpox, for chicken cholera, and for splenic fever in those animals which are susceptible to it.

Now I remarked that after a certain number of successive cultures the microbe became much less virulent, and guinea-pigs inoculated with it did not die, resisting an injection of from 50 to 100 cubic centimetres of attenuated culture fluid. They had slight fever, loss of flesh, and some other symptoms, which disappeared in a few days; besides, in a great number of the animals thus vaccinated, having made a few days later an injection of virulent blood, I proved that none of them died, although the same injection killed all those not inoculated with attenuated cultures.

The vaccine is prepared as follows: The blood of a patient, dead or about to die of yellow fever, is injected into the veins of a guinea-pig or a rabbit. A second animal of the same species is then inoculated with the blood of the first, and so on for six or seven animals. With the blood of the last cultures are made, which are transplanted at least four times; then I commence inoculations upon man, not, however, without having first ascertained, by experiments on animals, that the inoculations will not produce grave results. We thus obtain a tenth or twelfth generation from the primitive microbe, the virulence being notably diminished. The attenuation is caused by the new conditions with which the microbe is surrounded in passing through the organism of the guinea-pig, and its after-cultivation in sterilized test-tubes containg beef broth or gelatine.

Besides this, cultures attenuate of themselves gradually under the influence of air, so that a liquid at first virulent may be inoculated without danger in from seven to ten days afterward. These cultures once attenuated preserve their attenuation indefinitely until epidemic seasons, during which their activity almost insensibly increases. I, therefore, undertook experiments to ascertain how to renew the virulence of the cultures, and I can now, at any time of year whether during the epidemic period or not, keep up the virulence of these cultures, and change them at will from a toxic to an attenuated condition, and *vice versâ*, obtaining gradually the energy proper for vaccination and increasing it up to that which is infallibly fatal. I proceeded as follows in obtaining this important desideratum.

1. I practised inoculation by the hypodermatic method, injecting under the wing of pigeons or chickens 15 minims of attenuated culture fluid, used for the inoculation of patients.

2. Three hours afterward I killed the birds, in the blood of which the culture had been in a state of incubation or digestion, collecting the blood in sterilized flasks, conducting the operation with all the technical precautions necessary to prevent the introduction of foreign germs.

3. Immediately after, I inoculated small birds with this blood, allowing 5 minims to 7½ drachms weight of the animal.

All those used in this experiment died within seven days.

The experiment repeated fifteen times on *tiés* and *sanhassics*[1] gave identical results.

4. At the autopsy I found in the bodies of the birds lesions similar to those of yellow fever, and among the appearances I would would cite as of high diagnostic importance, matter black as writing ink in the gizzard and intestines. The blood of these birds examined microscopically shows the microbes characteristic of the disease.

5. The blood of the chickens and pigeons killed as stated in paragraph 2, preserved its deadly virulence for sixteen days, after which attenuation commenced.

6. Guinea-pigs inoculated with the same blood (the inoculation being intrahepatic, into the peritoneum or simply subcutaneous), even in a proportion of eight minims per one and one-quarter pounds weight of animal was also toxic, killing in from two to ten days. The anatomical lesions confirmed the diagnosis of yellow fever. The fluid of the stomach was very turbid and black, and the urine contained albumen.

7. If the blood from pigeons or chickens No. 1 is injected into one of the same species No. 2, 3, 4, or 5, the energy of the virus progressively decreases according to the number of transplantations made from one animal to another. We may thus always procure a series of cultures systematically graduated. When animals, either birds or guinea-pigs, are inoculated with attenuated cultures they obtain the immunity of vaccination and are no longer affected by fatal virus.

8. The specific microbe having its ordinary appearance is found in every case in cultures thus graduated.

9. Confining myself for the present to the statement of these facts, I will not now attempt to explain why the microbes remain unaffected in strength for some hours within an animal organism itself insusceptible to yellow fever, this agreeing with the observations described in my last work, and recently repeated, with an identical result by Dr. Rangé, of the French Navy.

The fact that an organism may not itself be affected by a morbid element, and may yet increase the virulence of that element, extraordinary as it may seem, may explain a great number of questions relative to the peculiarities of contagion during epidemics, as it may also explain many obscure circumstances relating to the hereditary transmission of various disorders

III. *Vaccinations upon man; practical results.* Only after the long experiments already described upon

[1] Names given to birds of the genus Tanagra which feed upon oranges, bananas, and other fruits.

the virulent power of the microbe of yellow fever, was I encouraged to inoculate the human organism with it. The first 400 vaccinations were made endermically, but I came to prefer the hypodermatic method as being much more sure and easier in practice.

The following is the method of procedure: The culture fluid is taken from the flask with every precaution against foreign germs, and preserved in small tubes containing from one to two drachms, these being sterilized by heat and stopped by emery. A few drops of the liquid are turned into a clean capsule, taken up by a Pravaz syringe, and then there is thrown under the skin, a quantity varying from two to fifteen minims, according to the age of the individual. The disturbances which result from the vaccination are like the prodromes of yellow fever. They are manifested by intraorbital headache, rigors, general lassitude, with heaviness of the limbs, backache, febrile action (99.5°, 100.5°, 102.5° F.), slight epigastric pain, and sometimes nausea, or even vomiting, all lasting not longer than two or three days without the use of remedies. There is no local cause for these phenomena, for there only appears around the puncture a slight reddish areola which quickly disappears.

I shall give a résumé of the results hitherto obtained from these vaccinations. The vaccinations have been performed gratuitously, and were authorized by Ministerial Decree No. 4546, of the Brazilian Government, Nov. 9, 1883.

During the epidemic of yellow fever which took place at Rio Janeiro in 1883 and 1884, I vaccinated 418 persons, not only before the epidemic but while it was raging with its greatest intensity. The number of unvaccinated persons who died of yellow fever was 650. Among the vaccinated persons there were *seven* who also appeared on the list as having died from the disease. Although there are serious doubts as to whether the diagnosis was correct, I will follow the counsel of my distinguished colleague, Dr. Trouessart, and not seek to suppress these rare cases of failure, especially in view of the imposing number (411) of successful vaccinations which I can put to my credit. This is an extremely favorable proportion, especially when we reflect that the patients in question belong to the working classes, and lived in *estalagens*, damp, narrow, and badly ventilated chambers in the most unhealthy quarter of the city, where the mortality among the unvaccinated, especially among foreign workmen, was great.

Among the 650 unvaccinated persons who died of yellow fever (October, 1883, to June, 1884) 577 were strangers, only 73 Brazilians. Now I vaccinated 307 strangers, the Brazilians who fill up the list of 418 all came from the interior and were therefore under the same conditions of susceptibility as strangers, the yellow fever being unknown in the interior of Brazil, and flourishing only on the sea coast. Not one of the Brazilians vaccinated died of yellow fever.

The results obtained the next year (January to August, 1885) by means of inoculations made, not by the lancet but by the hypodermatic method, were still more favorable. During this interval the number of deaths from fellow fever from among the unvaccinated at Rio Janeiro was 278, 200 strangers and 78 Brazilians, 44 only being born in that city. During this same period I vaccinated 3051 persons; 2186 natives, and 865 strangers. Among the 2186 natives, 625 were young children of foreign parentage, consequently as susceptible as strangers themselves. During the entire epidemic not one died. The immunity was absolute.

These figures speak for themselves, I think, but this is not all, for during the last epidemic which broke out at Rio Janeiro in 1886, the statistical results confirm their eloquence.

In fact, during this period we vaccinated 3473 persons: Brazilians, 2763; strangers, 710. Of the Brazilians, 489 were of foreign parentage, all quite young, and should really be added to the 710 strangers, as presenting the same degree of susceptibility as the latter. More than this; 222 came from different provinces of the interior and the south, and were therefore in a very favorable condition for contracting the disease. There were really 1421 vaccinated persons who should be added to those who cannot be said to be exempt from contagion by reason of residence. There remained 2053 Brazilian subjects, age varying from a few months to sixty years. In this group a large number, by reason of age or residence in quarters most subject to the scourge, were under the most favorable conditions for becoming victims. Among those vaccinated there were but eight who died of yellow fever, one of whom had been inoculated in 1885, although during the same period the mortality from the disease among non-vaccinated persons was 1389, thus divided: strangers, 1079; Brazilians, 310.

If we recapitulate the vaccinations by the hypodermatic method during 1885 and 1886, we obtain the following result:

First vaccinations in 1886	3473
Deaths of vaccinated persons	7
Second vaccinations in 1885	3051
Deaths of vaccinated persons	1
Total vaccinations	6524
Total deaths of vaccinated persons	8
Mortality of vaccinated persons	1 per cent.
Mortality in yellow fever cases of non-vaccinated persons according to official reports for the years 1885 and 1886	1667

Let us now arrange this so as to include the statistics of 1884, when we employed the endermic method; we have:

Vaccinated	6942
Deaths of vaccinated persons	15

Which gives us hardly two per cent of mortality of vaccinated persons.

Deaths of the non-vaccinated	2317

I here give but a short abridgment, the entire statistical details are given in a paper presented to the Academy of Sciences at Paris. Still, I think it is sufficient to show the real benefits which may result from a general use of the prophylactic method.

For all the statistical details the reader is referred to the following works:

1st. "Rapport sur les inoculations préventives de la fièvre jaune durant l'épidemie qui a regné en

1883 et 1884, à Rio Janeiro, presenté au Ministre de l'Interieur au Bresil." This report is annexed to my work entitled "Doctrine microbienne de la fièvre jaune."

2d. "Le vaccin de la fièvre jaune. Resultats statisques des inoculations preventives pratiquées avec la culture du microbe attenué, de Janvier à Août de 1885."

3d. "Statistique des vaccinations pratiquées avec la culture attenuée du microbe de la fièvre jaune de Septembre, 1885, à Septembre, 1886."

I also recommend the report made by Drs. Rebourgeon, Gibier, and myself to the Académie des Sciences de Paris, entitled "Résultats obtenus par l'inoculation préventive du virus atténué de la fièvre jaune." This paper was presented and read before the Academy of Sciences by the lamented Prof. Vulpian, who introduced it with some remarks very flattering to us, thus contributing to the success of our investigations.

MEDICAL PROGRESS.

TYPHOID FEVER CONTAGION IN THE ATMOSPHERE.—DEVALZ, of Eaux-Bonnes, France, recently reported to the Medical Society of the Hospitals a case of typhoid contagion in a hotel, where a guest brought the fever with him, and where three daughters of the proprietor were attacked. Bacteriological examination of the water was negative. The exhalations from the stools, which were not disinfected, are supposed to have been the medium of contagion.—*L'Union Médicale*, July 26, 1887.

SOLANINE.—GAIGNARD concludes an extensive investigation of the properties of this drug as follows:

Solanine is a glucoside which does not combine with acids to form salts. Acids decompose it into solanidine and glucose. It is insoluble in water; little soluble in alcohol, ether, and the oils. It is sparingly soluble in strongly acidulated water. It cannot be used hypodermatically; its acid solutions are too caustic. It is also caustic when held in suspension. It may be given in pills of 1½ or 3 grains. Daily dosage of 4½ grains to 6 grains is well borne. Its high price, unequal action, and large doses needed to produce an effect make it an undesirable and not to be recommended analgesic.—*Bulletin Générale de Thérapeutique*, July 15, 1887.

CASTOR OIL EMULSIFIED WITH CASEINE.—GASSICOURT has found the following a convenient combination:

R.—Ol. ricini	. . . .	15 parts.
Aq. lauro-cerasi	. . .	5 "
Aq. destillat.	. . .	100 "

Casein saccharat. q. s. to form an emulsion.—*Le Progrès Médical*, July 16, 1887.

FRACTURE OF THE HARD PALATE.—DR. E. HARRISON GRIFFIN, of New York, reports (*Medical Record*, July 21, 1887) a case, from injury by falling on an instrument in the mouth of a child thirty-two months of age. A portion of the hard palate was severed and hung down upon the tongue. The parts were readjusted and retained in place for two weeks by an obturator perforated for drainage, at the end of which time union was so complete that all marks of the injury had become effaced.

PRENATAL TUBERCULOSIS.—The *Centralblatt für klinische Medicin* of July 16, 1887, quotes the conclusions reached by FIRKET, who has written at length on the subject, as follows:

Infection through tuberculous semen the author considers doubtful, although Javi has found bacilli in the seminal ducts which had not, however, produced any changes in the epithelia of the prostate. Bacilli attacking the ovum would injure its development and produce monstrosities, which has not been observed. Bacteria, however, have been found in the placental circulation, which is only accessible through the maternal blood. Cases of general infection in which, besides the lungs, organs not in communication with the external world are implicated, are cited. In about half of the cases of pulmonary tubercle, however, local infection from without only exists. Tubercle has been found in the placenta, although doubted by some. Two cases of tuberculosis of the liver have been found in infants, and one case in young animals; which is explained by the important part which the fœtal liver plays in fœtal circulation.

Constitutional infection may remain long latent, and then attack the lungs.

HYDRASTIS CANADENSIS IN PILL FORM.—*Les Nouveaux Remèdes* for July 24, 1887, gives the following useful prescription:

R.—Extract. hydrastis canadensis	.	5ij½
Ext. ergot.	. . . . .	gr. 45
Ferri redact.	. . . . .	gr. 45

Div. in pil. 120 in nunc.—Sig.

From two to five pills every three or four hours.

THE DIAGNOSIS OF NEOPLASMS BY EXAMINATION OF THE BLOOD.—HAYEM is quoted by the *Centralblatt für die Medicinischen Wissenschaften* of July 23, 1887, as follows:

Taking as normal 6000 white blood corpuscles in 1 cubic millimetre of blood, the variations were as follows:

Mammary scirrhus, 13 cases, 7400 to 21,700; in 10 cases, over 10,000; in a 14th case, in an aged patient, the number was greatly reduced.

Medullary sarcoma of the breast, 3 cases, all above 10,000.

Scirrhus of the pancreas, 2 cases, 9400 and 9900.

Medullary sarcoma of the testis, 12,250.

Osteosarcoma, 7 cases, 19,500; one case of very rapid growth, 52,700.

Lymphosarcoma, from 11 to 20,000.

Epithelioma, an average of 7800.

Gastric cancer, in 7 cases, an average of 7600; in 5 cases, 17,600.

The influence of operations was shown to be—

Mammary scirrhus, 3 cases; before operation, 21,700, 11,500, 11,000; after recovery, 6200, 6200, 8400.

Medullary sarcoma of the breast, before operation, 10,000; after operation, 9000.

Lymphosarcomata and osteosarcomata showed a still greater diminution after operation.

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A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, SEPTEMBER 17, 1887.

CATHETERIZATION OF THE URETERS.

AMONGST rare procedures for diagnostic and curative purposes may be mentioned catheterization of the ureters in the female. This operation has been developed chiefly by DR. KARL PAWLIK, of Vienna, and the publication of his method and results marks quite an epoch in the history of renal surgery.

One of the greatest obstacles to the performance of operations upon the kidneys is the great uncertainty as to the condition of the opposite organ, and some of the most lamentable results after nephrectomy have been due to the existence of unsuspected or undetermined lesions of the remaining kidney. The development of the operation of sounding the ureters has progressed to such an extent that, in the female at least, it is now possible to determine the exact condition of both kidneys in many instances. In the male, as yet, nothing has been done in this direction, as it is scarcely possible to reach the orifices of the ureters except by the performance of a perineal section, which has not been practised for this purpose, so far as we know.

Pawlik relates, in the *Wiener med. Presse*, the histories of ten cases in which he has sounded the ureters, and the value of the procedure is clearly shown. In the first case the catheterization resulted not only in the elucidation of the cause of the severe kidney colic, but a cure was effected at the same time. In this case it was found that mucus had been rolled up into a ball, which obstructed the ureter, and developed severe pain. The necessary dilatation was effected, and the condition relieved. In the second case the patient had previously submitted to double ovariotomy at the hands of Prof. Billroth, from which she recovered; but subsequently a discharge of urine occurred from the abdominal wall, and a uretero-abdominal fistula resulted. It was sought by sounding to ascertain the exact condition of the ureters, and it was discovered that one ureter was impervious, owing to parametric exudation. An attempt to dilate the ureter failed, and caused a renewal of the inflammation, for which reason it had to be discontinued. The opposite kidney was proved to be healthy, hence nephrectomy was performed for the cure of the urinary fistula. In the third case, one of wandering kidney, the exploration of the ureters proved that the opposite kidney was not sound, hence a contemplated extirpation was desisted from. In the fourth case, in which was a renal tumor, the soundness of the opposite kidney was demonstrated, and the diagnosis confirmed.

In the fifth case the diagnosis wavered between a tumor in a floating kidney, and an ovarian tumor with a long pedicle. The history spoke in favor of the first supposition, but the catheterization decided for the latter. In the sixth case the exploration confirmed the probable diagnosis of hydronephrosis, and at the same time the hydronephrotic fluid was evacuated, its further development hindered, and the normal function, of the not essentially diseased kidney restored. In the seventh case there was hæmaturia, the source of which was doubtful, and the sounding not only proved its renal origin, but, what was more remarkable, arrested the bleeding, which had lasted two months. This returned later, lasted three weeks, and again ceased after a repetition of the sounding. In the eighth and ninth cases the supposition of a renal tumor was proven to be correct, and the healthy condition of the opposite organ ascertained. Nephrectomy was accordingly performed in each case. In the tenth case an attempt was made to evacuate a hydronephrosis with the catheter, but it did not succeed, notwithstanding that the catheter clearly reached the renal pelvis, as the presence of hydronephrotic elements in the urine, after the exploration, showed. A renal fistula was then formed by the lumbar incision.

These results serve to draw attention to this procedure, as an addition to our methods for diagnostic purposes chiefly, but also, in some cases, as a therapeutical agent of marked value. There are probably other purposes which may be subserved by this operation, such as the dislodgement of an impacted calculus in the ureter.

Dr. Pawlik directs that the bladder should be filled with about 200 cubic centimetres (about 7 ounces) of fluid previous to undertaking any exploration of the ureters. When the bladder is filled to this extent, the orifices of the ureters are situated upon a prominent swelling which runs in a convex bow, from the basal angles of the trigonum toward the urethra. When the bladder is

further distended, this swelling disappears. Generally an arrangement of furrows is found upon the anterior wall of the vagina, which forms an angle, the apex of which is placed behind the urethral prominence, whilst its arms are separated from each other by the vaginal portion of the uterus. The orifices of the ureters are placed within this angle. The point at which the posterior bladder wall turns toward the uterus may frequently be recognized on the anterior vaginal wall, as a transverse line in front of the vaginal portion of the uterus. It forms with the above-mentioned angle a triangle which corresponds to the trigonum, and to a small portion of the posterior wall of the bladder when the latter is distended.

The most important guide for sounding is the prominent swelling of the ureter. The patient should be in the lithotomy position, whilst the perineum is retracted with a speculum, which exposes the anterior wall of the vagina, to view. The catheter is introduced into the bladder, and can be guided by lightly raising up the vaginal wall. Proceeding toward the corresponding ureteral orifice, if no obstruction is encountered, the catheter has been carried too near the middle line. When the opening of the ureter is reached, it is known by the fact that all resistance ceases, and a slight depression is formed in a circumscribed space on the front vaginal wall, the sinking of the handle of the catheter is hindered, and the instrument can be pushed further and further to the side. The catheter can be introduced as far as the pelvis of the kidney, if the ureter is not too tightly attached to the pelvis, or if the pathological changes in the cellular tissue have not fixed the ureter in the pelvis.

We have presented this notice of Dr. Pawlik's observations because they have an undoubted practical application. It may be that the knowledge to be obtained by the catheterization of the ureters will be but seldom required, but when serious surgical operations upon the kidneys are contemplated, information of the greatest importance may be gained in this manner, which could be obtained in no other way.

USEFUL MICROORGANISMS IN THE ALIMENTARY CANAL.

IN *L'Union Medicale* of August 23, 1887, are the records of some interesting results, obtained by PASTEUR, as to the influence of the microörganisms found in the alimentary tract of healthy persons, on the digestion of some of the common food stuffs. They throw much needed light upon this subject, and while these new views are still *sub judice*, they are worthy of the attentive consideration of both the physiologist and the general practitioner.

Pasteur, having first isolated no less than seventeen microörganisms of the mouth, including the micrococcus Pasteuri of Sternberg, and the coccus designated by the title *k*, of Pasteur, proceeded to add a given number of these microbes to various matters commonly taken as food, and the results are here expressed in the brief terms of the author. The addition of seven of these microörganisms to albumen dissolved that substance completely, while five caused it to swell and rendered it transparent. Ten of them added to fibrin dissolved it, while four rendered it transparent and swollen, nine dissolved gluten, seven coagulated milk, and six dissolved caseine. Three transformed starch into sugar and nine changed lactose into lactic acid; seven changed crystalline sugar; seven produced fermentation of glucose and transformed it partially into alcohol. These organisms also were found to possess the power of resisting the gastric juice for as long as twenty-four hours at the temperature of the body. In the fecal matters he recovered six of these microörganisms of the mouth, the bacillus mesentericus fuscus, the bacilus Coli commune, the bacillus *b*, *c*, and *e*, and the coccus *k*, and four other microorganisms. One of these last dissolved albumen, two rendered fibrin transparent, three dissolved gluten, one transformed potato starch, three transformed lactose to lactic acid, while two coagulated milk, and so on, with many of the various substances generally taken by man.

M. Pasteur, therefore, concludes that the microorganisms found in the normal human alimentary tract are important factors in aiding the carrying on of digestion. While it has generally been supposed that these microörganisms must have some functions to perform in the intestinal canal, so far as we are aware, these experiments are the first to place the supposition on anything like a firm basis, and the repute of the investigator gives assurance as to the accuracy of the deductions he has drawn.

Further experimentation may, and very likely will, give us still further data concerning this important matter, and the world, both professional and otherwise, may soon learn that the word microbe and microörganism is not always synonymous with some morbid process.

AN EMERGENCY SERVICE DURING THE CENTENNIAL CELEBRATION.

THE medical profession of Philadelphia will provide an emergency service modelled after the Geneva Red Cross Commission, which will have stations along the route of parade where the physicians on duty will be provided with ambulances and needed appliances for first aid to injured. When it is remembered that at the recent Jubilee of the Queen in London about 600 casualties occurred, the need for such precaution is apparent.

DR. ALONZO CLARK, one of the oldest and most eminent physicians of New York City, died at his residence in that city, on Tuesday, in the eighty-first year of his age. He had been in feeble health for some years past.

Dr. Clark graduated from Williams College in 1828, and received his degree of M.D. from the College of Physicians and Surgeons of New York in 1835. In 1848 he was elected to the Chair of Physiology and Pathology in his Alma Mater, and in 1853 he was transferred to the Chair of Practice of Medicine. He was for a long time Visiting Physician to Bellevue Hospital, President of the Medical Board at St. Luke's, and Consulting Physician to the Northeastern Dispensary. He belonged to numerous societies and institutions, among them being the State Medical Society, of which, in 1853, he was President; the Academy of Medicine, the County Medical Society, the New York Society for Relief of Widows and Orphans, and the New York Pathological Society.

THE New York State Medical Association will hold its fourth annual meeting at the Hotel Brunswick, New York, on September 27th, 28th, and 29th, under the presidency of Dr. Isaac E. Taylor, of New York.

THE Emperor of Austria has conferred upon M. Pasteur the decoration of the Order of the Iron Crown, with the title of Baron.

SOCIETY PROCEEDINGS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Held at Washington, September 5–10, 1887.

(Specially reported for THE MEDICAL NEWS.)

GENERAL SESSIONS

THURSDAY, SEPTEMBER 8TH.

THE Congress was called to order shortly after 10 o'clock, by the President, N. S. Davis, M.D.

INOCULATION AGAINST YELLOW FEVER.

The Associate Secretary, Dr. W. B. Atkinson, of Philadelphia, then read the resolutions adopted in the Section of Public and International Hygiene on the investigations of Dr. Domingos Freire, of Brazil. (See THE MEDICAL NEWS, Sept. 10th, page 320.)

ENTERTAINMENTS.

DR. A. Y. P. GARNETT, Chairman of the Committee of Arrangements, announced that as the time had been short for the change of tickets for the banquet in the evening, he feared many were not aware of the change, and that as a ticket would be absolutely required of those applying for admittance, he asked that the Chairmen of the various Sections would announce the fact from their respective chairs at the morning sessions.

THE ANNIVERSARY OF THE DISCOVERY OF AMERICA.

The following resolution was then proposed:

Whereas it is proposed to hold at the city of Washington, in 1892, an international celebration in honor of the four hundredth anniversary of the discovery of America by Christopher Columbus, and an exposition of the history, arts, and industries of all nations,

Resolved, That the International Medical Congress favors this patriotic movement, and commends it to the nations of the world.

This announcement elicited from DR. SEMMOLA an enthusiastic approval of the project. He spoke as follows:

"Gentlemen: There are things so great in the history of humanity that it is not possible to glorify them as much as they deserve. The discovery of America by Christopher Columbus is one of these. I have been educated from my infancy to venerate the memory of that immortal Italian, but I confess that now that I have crossed the ocean, even with all the facilities that steam and nautical science afford, it is the first time that I have been able to conceive a correct idea of the genius of Columbus, and to appreciate his enterprise, his hardihood, and the foresight which never failed him to the last day of his journey. So that now I prostrate myself before Columbus, and worship him as of divine emanation.

"Therefore, gentlemen, I rejoice with you, and congratulate you from the bottom of my heart for the noble sentiment that has inspired you in proposing an international testimonial in honor of the immortal son of Genoa; and be it as an Italian, or as a member of the Parliament of Italy, as a delegate of my Government to this Medical Congress, and even as one of its Vice-Presidents, with infinite delight do I associate myself with this proposition, and thank you most sincerely."

The following gentlemen were announced as having been appointed on

THE COMMITTEE TO SELECT THE NEXT PLACE OF MEETING,

in accordance with the resolution adopted on the preceding day

Argentine Republic—Dr. Villa, of Buenos Ayres.
Austria-Hungary—Dr. Farkas, of Buda-Pesth.
Belgium—Dr. Servais, of Antwerp.
Brazil—Dr. Freire, of Rio de Janeiro.
China—Dr. Boone, of Shanghai.
France—Dr. Landolt, of Paris.
German Empire—Dr. Martin, of Berlin.
Great Britain—Dr. Pavy, of London.
Italy—Dr. Semmola, of Naples.
Japan—Dr. Saiga, of the Imperial Navy.
Mexico—Dr. Alvarado, of Mexico.
Russia—Dr. Reyher, of St. Petersburg.
Spain—Dr. Laleardа, of Seville.
Sweden and Norway—Dr. Tillman, of Halinstadt.
Switzerland—Dr. Cordes, of Geneva.
Turkey—Dr. Post, of Beirût.
United States—Dr. A. L. Gihon, United States Navy.
Egypt—Dr. Grant (Bey), of Cairo.

DR. MARTIN, of Berlin, then took the chair.

DR. P. G. UNNA, of Hamburg, delivered a general address on

THE RELATION OF DERMATOLOGY TO GENERAL MEDICINE.

(See page 325.)

At the close of the address, SIR JAMES GRANT, of Canada, moved that a vote of thanks be tendered Dr. Unna for his very able and exceedingly interesting address. Adopted.

FRIDAY, SEPTEMBER 9TH.

PRESIDENT DAVIS called the Congress to order at a few minutes after 10 o'clock.

ENTERTAINMENTS.

Assistant Secretary, W. B. Atkinson, announced that the foreign delegates and their wives alone, would be admitted to the Government Steamer for the excursion to Mount Vernon at 10.30 A. M. to-morrow, and that the Grasslands entertainment was restricted solely for the foreign delegates and their ladies.

A COMMEMORATIVE MEDAL.

DR. J. M. TONER announced that it was known to most of those present, that there had been a movement to have struck a medal commemorative of the Ninth International Congress, similar to those of previous congresses. He was happy to state that the subscriptions already received were sufficient to warrant the issue of the medal, and that it would be struck at the United States Mint at Philadelphia. Two hundred have been subscribed for, but as it is probable that many more desire them, he made this announcement in order to give them an opportunity to subscribe and pay five dollars to the Treasurer.

THE NEXT MEETING OF THE CONGRESS.

The SECRETARY-GENERAL read the report of the Committee appointed yesterday, to select a place and time for the meeting of the Tenth International Medical Congress. The Committee reported that Dr. M. Semmola, of Italy, had been elected *Chairman*, and Dr. Assaky, of Bucharest, *Secretary*.

By a vote which was, with one exception, unanimous, Berlin was chosen as the place of meeting, and Prof. Virchow was named as President of the Congress.

DR. J. D. PHILLIPS, of London, then took the Chair.

DR. G. FIELDING BLANDFORD, of London, delivered a General Address on

THE TREATMENT OF RECENT CASES OF INSANITY.

The speaker prefaced his address by the statement that he had expected to read his paper before the Section on Psychology, and that had he known that he would be called upon to address an assemblage like the present one, he might have prepared something very different.

(This address will appear in full in the next number of THE MEDICAL NEWS.)

At the close of the address, DR. CORDES, of Geneva, arose and after complimenting the speaker, in French, on the high character of his address, moved a vote of thanks. The motion was seconded by Dr. Kretzmeyer, of New York, who spoke in German, and it was unanimously adopted.

RAILROAD ACCIDENTS.

The SECRETARY-GENERAL then read the following resolutions adopted by the Section on Public and International Hygiene:

Whereas, The whole community has been shocked by the almost daily occurrence of terrible accidents on many of the railroads, causing considerable loss of life, and by the neglect of the most elementary sanitary laws,

Whereas, This Section considers itself in a degree the guardian of public health,

Resolved, That the attention of this Ninth International Medical Congress be respectfully called to this most important question, and that it be requested to use its influence to obtain the necessary reform.

The President then announced that the Congress would meet at 9.30 Saturday morning, for the purpose of a formal adjournment.

Adjourned.

SATURDAY, SEPTEMBER 10TH.

At 9 30 A.M., about one hundred and fifty members and nearly fifty visitors met for the formal closure of the Congress, and a few minutes later, the assemblage was called to order by the President.

MISCELLANEOUS BUSINESS.

SECRETARY GENERAL HAMILTON read by title three sets of resolutions passed in the Sections of yesterday. The first was from the Section of Climatology in regard to the establishing of national bureaus of vital statistics; the second was from the Section of Military and Naval Medicine, and related to the prohibition of the use of explosive projectiles in naval warfare; and the last was a resolution from the Section of Public and International Hygiene, relative to the teaching of hygiene in the public schools.

THANKS AND CONGRATULATIONS.

DR. GRAILY HEWITT, of England, arose and said:

"I come before you as one of the foreign members of the Congress, and I have been requested to express in a few words the appreciation which is felt by the foreign members of this Congress of the efforts which have been made by the executive of the Congress for the furtherance of the object of this meeting, and to convey to them our thanks for the attentions that have been bestowed upon us, and our appreciation of the success which had attended their efforts. I desire also to express our sense of the hospitality, one of kindness and attention which we have received, both in public and private, at this great meeting—attentions which will contribute to make our visit to Washington a source of congratulation and a happy memory in the future. I beg to submit to you the following more formal expression of our ideas." Dr. Hewitt then read the following:

"On the part of the foreign visitors and officers of the Congress, we desire to convey to the President of the United States our best thanks for his presence at the ceremony of the inauguration of this Congress. We desire to express to the Executive Committee of the Congress, particularly to Dr. Henry M. Smith, Dr.

John B. Hamilton, Dr. A. Y. P. Garnett, Dr. Toner, and Dr. Arnold, our very high appreciation of the efforts they have made for efficient organization, action, and working of the Congress, which have rendered it so great a success. We would convey our warmest thanks to the citizens of Washington for the kind hospitality, both public and private, we have received during our pleasant visit to their beautiful city."

Dr. Hewitt's remarks and resolutions were loudly applauded.

DR. MARTIN, of Berlin, then expressed in German the gratitude which he and his fellows from abroad felt toward those having in charge the arrangements of the Congress. He had not come here without some doubts of the success of the Congress, but these had been all removed, and he now felt that it had taken a high rank with former Congresses. The names of the entertainers cannot, like those of the winners at the old Olympic games, be recorded in letters of gold, but we can express our sentiments by a sincere vote of thanks.

DR. LANDOLT, of Paris, next arose, and said in French:

"I have been commissioned to express to the President of the United States our sentiments of profound gratitude. Although feeling that I am unable to find words proper for the occasion, I accepted the honor, since the gratitude that springs from the heart had no need of eloquence to make it understood. Mr. President and gentlemen, we have already assisted at a series of International Congresses. We have been well received everywhere. The countries of Europe have rivalled each other in their zeal to make our stay with them agreeable in their most beautiful cities; but it has not often been our lot to see the chief of the State mingle in person among us and take part in our labors. The President of this great republic came among us to speak us welcome with his sympathetic voice. He invited us to his own home and gave to each of us a hearty grasp of the hand, significant of his most cordial hospitality. The sanction given President Cleveland to our Congress has given the greatest charm to our stay in this capital. Returning to our hearths we will preserve the most grateful and respectful remembrance of the President of the Republic, and we say to the whole world that the United States, already so favored, possesses above everything a chief who directs them surely in the way of progress and prosperity."

DR. EDMUND OWEN, of London, then arose and said he desired to second Dr. Hewitt's resolutions. He thought he was admirably qualified to discourse on American politics, as was entirely ignorant of the subject. In science they had no politics. "We are extremely happy," he said, "to have visited the United States during the presidency of Mr. Cleveland." He said he asked an American friend the other day, and a very intelligent man, if he voted for Mr. Cleveland, and the American said no. Then he asked the American if he were satisfied now, and the laconic answer was, "Guess I am." "If," said Dr. Owen, "that question was put to this meeting, 'are we satisfied?' I say, 'guess we are.'" A great man like the President might have found something else to occupy his attention, say, in the White Mountains about this time of the year; he might have been driven away by the doctors, but instead of that he remained here to welcome them. "When the history of his grand country is written," he said, "we trust President Cleveland will have a niche in the temple of fame side by side with those great men, Lincoln and Garfield. When you are in our country we love to hear you say, 'We admire your queen.' We can say to you with all truth we admire, we love your queen of beauty and grace, and in seconding this vote of thanks we simply express a prayer that Mr. President Cleveland and Mrs. Cleveland may long continue in strength and health to preside over a happy, a prosperous, and a united country."

PRESIDENT DAVIS said that it was hardly necessary to put a question of this character, but in order that it might be recorded, he would do so. The vote was unanimous.

A PRESENTATION.

There was then a pause of a minute, when the SECRETARY-GENERAL arose, and on behalf of the Section of Oral and Dental Surgery, presented to Dr. Hunt, of Washington, a handsome gold-headed cane as a token of the appreciation of his courtesy.

FAREWELL.

After another brief pause, DR. HAMILTON again arose and said:

Mr. President: I could not fail to be deeply sensible of the great kindness bestowed upon me, and the many words of encouragement received both during this present meeting and for the past six months. I am profoundly grateful for the expressions now placed upon record. But, sir, the success of this Congress is due to no one man. All on this side worked with the spirit and enthusiasm of Americans whose hearts were in the work, but all our efforts would have been in vain and the strongest would have failed had it not been for that noble army of scientific men abroad, who, deaf to all misrepresentations of disappointed factionists, came from old England, the universities and vine-clad hills of France, the seats of learning in Germany, the cities of the Alps, from sunny Italy, the lowlands of Holland, the fastness of the Danube, from far-off, but ever-near Russia, from the golden shores of China and Japan, from Cairo and the sands of Egypt, and the everlasting hills of Palestine, and I say to these representatives here assembled, that to them we owe a debt of gratitude which time cannot efface, and as these our dear colleagues have braved the dangers of the deep, and sustained, in some cases, the shock of calumny to be with us, so let us here say that when we again meet in Berlin in 1890, let it be to renew those friendships formed here, and to grasp once more the hands of those who have been true to us now.

DR. DAVIS, the President, then asked indulgence for a few words. After referring to his more than half a century of professional life, he said it had been one of the objects of his life to promote the harmony which should exist among all branches of medicine. It was to-day the happiest feeling of his life that he could now stand here in this Capital of the United States, and not only see the profession he loved united and working harmoniously, but to stand here among representatives from almost every country on the globe. He thanked those who had come across the water to attend the Congress, not only in his own name, but in the name of the profession in America, in whose name the Con-

gress had been invited to sit here. There were, he said, members of the profession from every State in this great Union assembled here to greet the foreign members. There is a larger gathering than there has been in any other Congress, leaving out the profession of the city in which they have been held. He thanked the members of the Congress for the courtesy shown him in sustaining him in the discharge of his duties. "Life with me," he said, "is not long, but if it is spared with sufficient health I shall take great satisfaction in meeting my friend, Dr. Martin, and all his comrades in Berlin in 1890."

He then declared the Ninth International Medical Congress adjourned *sine die*.

SECTIONS.

General Medicine.

WEDNESDAY, SEPTEMBER 7TH.

DR. JOHN A. OCTERLONY, of Louisville, read a paper on the

NATURAL HISTORY OF DISEASE.

He thought that the physician of to-day is too fond of prescribing medicines and not trusting Nature to do its duty. Nature possesses greater powers than we realize, and frequently the question must arise as to whether the patient died of the disease or his doctor. It is not to the discredit of therapeutics that nature is the greater power, it is rather the glory of this branch of medicine that it knows its own limits. As illustrative of his meaning he mentioned the various treatments which have been in vogue for the treatment of pneumonia, and said that the recovery of many of the cases simply showed that even the disease, and the doctor who aided the disease by bad treatment, could not withstand the tendencies of nature to promote a cure. In support of the truth of his theory that nature has such powers he mentioned cases he had seen of external cancer spontaneously cured. He advocated, therefore, to a considerable extent the "let the patient alone" doctrine.

DR. CRONIN, of Buffalo, spoke of the difficulty of leaving the patient alone with Nature, by reason of the distrust of the patient and his friends.

DR. SCOTT, of Cleveland, distinctly believed in the proper use of drugs in every branch of medicine.

DR. A. B. ARNOLD, thought there was a point to be reached halfway between too much medication and too little.

DR. PAVY, of London, supported Dr. Octerlony's views on the non-interference with nature, but did not enter into a discussion of the paper to any length.

DR. T. D. CROTHERS, of Hartford, then read a paper on the

DISEASE OF INEBRIETY AND ITS TREATMENT.

He believed the causes of inebriety to be as follows, namely: Heredity, physical shocks, structural changes of the brain, disturbances of nutrition, and certain acute or chronic diseases which develop into inebriety. Regarding the whole condition as one of an actual disease rather than a depression of moral sense, the author treated the subject from the standpoint of an alienist, and brought forward interesting data to show the limit of his remarks. Examination of records has shown that drunkenness passes over various countries in cycles. Thus, the proportion of drunkenness in Sweden and Norway is markedly increased once in every fourteen or fifteen years, in some other of the European countries in every eight years, and so over the whole world.

The disease inebriety may come on slowly or rapidly and may last or be transient. In some cases it simply remits, in others it comes, and goes never to return.

Statistics show that the number of moderate drinkers is decreasing, while the number of drunkards is increasing. He deprecated the misled efforts of those who advocate a treatment resting on a moral basis, since, as he before stated, inebriety is in reality on the border land of insanity, in many cases the sufferers are monomaniacs indeed.

He also thought that the present methods of treating drunkards in hospitals is wrong, since the food and surroundings of such institutions, and more particularly "reform" schools, is frequently absolutely harmful, in the depressed and perverted state of the inebriate's system, and, instead of placing his body in a healthy condition, leaves it in such a state that it wants more alcohol for support, and fails to bring the brain up to its proper standard.

General Surgery.

WEDNESDAY, SEPTEMBER 7TH.

THE discussion of DR. MACLEAN'S paper on

LAPARO-NEPHROTOMY

(See THE MEDICAL NEWS, September 10th, p. 313)

was first in order.

DR. HERFF, of San Antonio, Texas, agreed with Dr. Maclean that, in suitable cases, laparo-nephrotomy is the proper operation. Some years ago he had a case of a young woman who was newly married, and when about two months pregnant, she discovered a tumor on the right side, which was nearly as large as a child's head. She had no pain, and except that she had this tumor, she was in good health. The tumor, however, annoyed her very much, and she insisted on an operation being done. He, therefore, opened the abdomen in the median line, and removed the tumor. The remarkable thing about the case was that the tumor, which he thought was an ovarian one, proved to be the kidney and suprarenal capsule. From the lower end of the tumor the lower part of the kidney was hanging, while the upper part consisted of the suprarenal capsule enormously enlarged, sections of which presented under the microscope the appearance of the long cells of myrusa. The patient made a good recovery, and two years after the performance of the operation she was in perfect health. This was a case of both removal of the kidney and suprarenal capsule.

DR. HUGHES preferred the abdominal incision in all cases where it is practicable, and, as the result of his experience in these cases, would give the preference to the side, between the ribs and the crest of the ileum.

DR. LANGE, of New York, said that in a large number of these cases of tumors of the kidney, where there is fluctuation they are cases of pyonephrosis of usually very large size. He had operated several times for the removal of the kidney, and performed both the anterior and posterior operations. In the small tumors, and in

some of the larger ones, he preferred to make a small lumbar incision, empty the contents of the tumor out as far as possible, then wait until the remainder of the tumor lessens in size, which it will be very apt to do, so that it can be gotten out through even a very small hole or incision. Sometimes in renal calculi he had performed laparotomy, or rather the operation in the lumbar region, and then, after making this incision, by placing the patients in bed lying on their stomachs on a pillow, the kidney would float up where the wound was made, and could then be easily gotten up, and the calculus removed.

DR. M. H. RICHARDSON, of Boston, next read a paper entitled

GASTROTOMY FOR FOREIGN BODIES IN THE ŒSOPHAGUS,

in which he said that this operation was intended only for the removal of foreign bodies in the œsophagus which had passed so far down the œsophagus as to be lodged near the cardiac orifice. In regard to the length of the incision, it was not fixed; it might be only a very short one, or it might be large enough to put the hand inside the stomach, so as to reach up into the œsophagus, if that should be necessary, in order to extract the foreign body. The incision through the skin should be made over the cardiac end of the stomach, or might be made in the median line, and the incision through the walls of the stomach must be made in the cardiac end of the stomach. All the caution necessary in making this was to get the incision made without wounding the convexity of the lesser curvature of the stomach; and, in order to avoid this, the better way was to put the lesser curvature on the stretch.

He concluded that if the foreign body was lodged within six inches of the lower edge of the cricoid cartilage, it was best removed by an operation from the side or above, but if situated more than six inches from the cricoid cartilage, gastrotomy was the best thing to be done.

DR. F. S. DENNIS, of New York, then read a

REPORT OF AN AMPUTATION AT THE HIP-JOINT FOR THE REMOVAL OF A MALIGNANT GROWTH, SARCOMA.

This case was that of a young man aged seventeen years, who had no bad family history, and who had always been in good health until about five months prior to his admission to the hospital, when his weight was eighty-five pounds. Five months prior to his admission he had first noticed a dull pain in the thigh, and shortly afterward he discovered a swelling in the thigh. He had had no fall or blow.

About two months after the first appearance of the pain the tumor was aspirated, and about ten ounces of bloody fluid drawn off. The swelling was fusiform in shape, the skin was purple, and large veins were to be seen on the surface of the tumor, while the glands of the thigh and groin were much enlarged. The diagnosis was that it was a sarcoma of the femur, and amputation at the hip-joint suggested as the only means of saving life.

This amputation was done and the wound dressed antiseptically. The wound was entirely healed by the sixth or eighth day after the operation. After the patient left the hospital the wound reopened a little and discharged pus mixed with blood; this was found to be due to sloughing of the ligamentum teres, upon the removal of which the wound healed kindly, and the young man is now well.

DR. JASPER C. GARMANY then read a paper on the

SURGICAL TREATMENT OF EPILEPSY BY TREPHINING,

in which he related the case of a girl about eighteen years of age, struck on the head with a brick falling from a house-top and causing fracture of the skull. The skull was trephined and the splinters of bone removed, but some time after the wound had healed she began to have attacks of epilepsy, for which ordinary treatment was unavailing, and he finally operated on her with an entirely successful result. As a result of his researches on the subject he had found that lesions in the frontal and parietal regions are followed usually by the same symptoms, and that over fifty per cent. of the lesions in these regions are followed by epilepsy, which later on is complicated by insanity. Trephining at the site of the lesion and removing the cicatrix is usually followed by complete relief.

DR. SAMUEL BENSON, of London, read a paper on

FISTULA IN ANO OF THE HORSESHOE VARIETY.

Horseshoe fistulæ, as at present understood, are complete fistulæ, the external opening being situated on the opposite side of the bowel to the internal opening. This kind of fistula is rare, having been found five times in 750 cases of rectal disease. From these cases we gather that fistula in ano of the horseshoe shape may be complete or incomplete. Horseshoe fistula may be complicated with prolapsus. The most usual complication is anal ulcer. Sometimes polypus is also found. The average age of the patient is thirty-five years; males and females being attacked indiscriminately. The average number of days in bed is fourteen. If a correct diagnosis is made, the treatment consists in laying open the sinuses and paring the edges with scissors, dividing or paralyzing the sphincter muscle, and packing it systematically with cotton-wool to prevent the edges sticking together, and getting the wound to heal from the bottom.

A paper by ARTHUR TREHERN NORTON, F.R.C.S., of London, was then read by the Secretary in the absence of the author. It was entitled

REMARKS ON RODENT ULCER OF THE RECTUM.

In which the author declared that there is an ulcer of the rectum, persistent, unyielding to treatment, advancing to complete stricture of the rectum and usually appearing after thirty years of age. The ulcer begins immediately within the anus, after a time extending and completely surrounding the rectum; it is accompanied by a pain which is not usually severe and as it extends up the rectum contraction takes place with all the signs of stricture. Treatment by dilatation sometimes relieves for a time. From the clinical features of the disease and the microscopical characters the author was of the opinion that the disease is identical with rodent ulcer and suggested that further investigation into its pathology be made.

DR. GRANT (Bey), of Egypt, then presented a

REPORT OF SOME CASES OF LIVER ABSCESS AND THEIR TREATMENT,

in which he gave the opinion that in all cases of liver abscess we should first aspirate the abscess, and if that was not followed by cure then lay the abscess open by a free incision, and in extreme cases excise a portion of the ribs (one or more) over the site of the abscess, so that free access might be had for cleaning out the abscess cavity thoroughly with antiseptics.

DR. LEWIS H. SAYRE, of New York, then read a paper on

THE TREATMENT OF PSOAS ABSCESS BY POSTERIOR LUMBAR INCISION,

in which he strongly insisted on the early and free posterior and anterior incision in these abscesses and this to be followed by thorough drainage.

DR. EDWARD OWEN, of London, earnestly deprecated "ostrich surgery" in these cases and advised early opening of the abscess with free drainage.

DR. SPRENGLE, of Dresden, thought that in many cases there would be absorption of the pus if we waited for it and if we opened the abscess it was best to do it with an aspirator or fine trocar.

DR. LANGE, spoke of the constitutional treatment along with the surgical, and thought that he would not open these abscesses if he could avoid it until after the acute stage had passed.

DR. CHAVASSE, of Birmingham, England, thought it best to open these abscesses as soon as possible and give the sufferers a chance.

DR. E. ANDREWS, of Chicago, read a paper on

THE REMOVAL OF SEQUESTRA BY SOLUTION IN ACIDS,

in which he gave his experiments in detail and related a number of cases in which the sequestra had been removed by the use of acids without operation. He recommended that hydrochloric acid be used of a strength a little weaker than the officinal dilute acid.

Gynecology.

WEDNESDAY, SEPTEMBER 7TH.

DR. KELLOG, of Michigan, read a paper entitled

UTERINE DISPLACEMENTS CORRECTED BY MODIFICATIONS OF THE ALEXANDER OPERATION, WITH REPORT OF TWENTY CASES.

He still believes in the value of this operation notwithstanding unfavorable criticism. It is not only adapted to cases in which retroflexion alone exists, but also for those in which there is prolapse of the uterus, or of the uterus and ovaries. He believed it safe and effective if properly done, and much more likely to produce a cure than pessaries. The latter seldom result in radical cure, and are usually a source of annoyance and disgust to the wearers of them. It is also preferable to electricity as a remedial agent, though faradization may be employed in conjunction with it. The author had observed particularly the stimulating effect which it often has upon an enlarged uterus, producing great contraction and involution of the organ, as is frequently observed after the performance of Emmet's operation.

DR. A. MARTIN, of Berlin, said he had come to the Congress chiefly for the purpose of obtaining information concerning this operation. Though he was in the habit of seeing a very large number of cases in which displacement of the uterus existed, he had not yet seen a case in which this operation seemed indicated. His position was that which was held by most German gynecologists, for the operation had been done very few times in Germany.

DR. DOLÉRIS, of Paris, France, thought that Alexander's operation had been done only thirty times in France, twenty-four of the operations being his own. He believed that the operation was a logical one for prolapsus and retroflexion. An estimate of its value must be formed from both a technical and a practical standpoint. As to the former, the operation is not difficult, though sometimes rather tedious from difficulty in finding the ligaments and isolating them from surrounding tissues. The operation under antiseptic precautions is perfectly safe, even when the peritoneum is drawn up and stitched into the wound. The operation seemed to him much more satisfactory than the use of the tampon, or the pessary. When prolapsus is complicated with retroflexion, the operation is not indicated.

DR. TRENHOLME, of Montreal, objected to the general use of the operation. He believed it to be difficult, perhaps dangerous, and often ineffective.

DR. BOZEMAN then discussed Dr. Spanton's paper. He had observed as the most frequent causes of cystitis cicatricial contractions of the vagina, flexures of the uterus, and diseases of the urethra. For the first class of cases he had found dilatation of the contracted vagina as well as incision and division of bands useful, the vagina being packed with cotton-wool, while the patient is in the knee-chest position, by his so-called *columning* method. The same plan of treatment is applicable if a flexion causes the cystitis. If the disease arises from trouble in the urethra, as from redundancy of the mucous membrane, Emmet's button-hole operation in the inferior wall of the urethra may be performed, or a large opening may be made in the bladder. This operation of cystotomy was first performed upon the female in this country by the speaker in 1861, though Dr. Willard Parker had previously done it upon the male. The speaker's case was subsequently reported at a meeting of the New York State Medical Society.

DR. BALLS HEADLEY, of Australia, in discussing Dr. Hewitt's paper, advised, with the improvement of the general nutrition, the proper use of pessaries, or, if the organ were very large and the lips of the cervix everted, the performance of Emmet's operation.

DR. HEWITT, in closing, advocated preventive treatment in the way of suitable food and hygiene for those women whom he should consider predisposed to uterine displacement. If this were done, morbid changes in the shape and structure of the organ would not usually occur.

Therapeutics and Materia Medica.

TUESDAY, SEPTEMBER 6TH.

DR. HUGH HAMILTON, of Harrisburg, Pa., opened the Session with a paper on the

CHEMICAL PHILOSOPHY OF REMEDY,

which endeavored to prove that the therapeutist must

have regard for the ptomaines and like substances in treating disease, and use remedies capable of preventing their action.

Dr. J. G. Sinclair Coghill, of the Isle of Wight, followed with an interesting essay on

CHLORATE OF POTASH.

He was of the opinion that this drug has been unjustly and too hastily relegated to an inferior therapeutic position. The original researches of Wöhler and others seemed so unsatisfactory, in view of the undoubted therapeutic activity of the salt, that as far back as 1878 Dr. Coghill arranged a series of observations, the chemical part of which was conducted by Mr. Otto Helmer, F.C.S., with characteristic energy. He verified many of the experiments in his own person, and applied more than one novel process for attaining correctly the quantitative reduction of the chlorate as eliminated. The results were such as only to confirm the views of previous observers. It may be stated, generally, that the therapeutic properties of chlorate of potash are those suggested by its chemical constitution and properties. In all states of the system where the blood is impoverished either in amount or quality, where its nutritive efficiency, especially as regards oxygen, is impaired, the chlorate of potash is indicated, either alone or in such combinations as the complexity of the conditions present demand. In appropriate cases, its action, when judiciously administered in proper doses, will be found most potent. It is also a cardiac stimulant in small doses, and seems to exert an important influence on the nutrition of these tissues generally. Its action as an antiseptic, particularly in arresting chemical decomposition within the body, is to be considered as one of its most valuable properties.

Dr. H. A. Hare, of Philadelphia, called attention to some of the dangers of using chlorate of potash internally, and some of the popular fallacies regarding its action in the human body.

Dr. J. Solis Cohen, of Philadelphia, recommended its use very highly in diphtheria on account of its action on the passages involved. He spoke of the possible dangers under its administration, and thought that the condition of the urine should be constantly and carefully noticed during its administration, the drug being stopped as soon as decreased secretion asserted itself.

Other gentlemen spoke highly of the drug for its influence on all mucous membranes.

Dr. Traill Green, of Easton, Pa., spoke of its usefulness, but preferred chlorate of soda owing to its less irritating and depressing qualities. He also thought its solubility a word in its favor.

Dr. Charles D. F. Phillips, of London, England, then read a paper on the

INFLUENCE OF CERTAIN DRUGS ON THE ACTION OF THE KIDNEY, NOTABLY CAFFEINE.

He described the use of the ordinary oncograph, and detailed interesting results regarding the contraction and dilatation of the kidney under several diuretic drugs. His results with caffeine show that in large or too frequent doses it diminishes the secretion of urine, whereas small doses cause active diuresis.

The Section then adjourned until Wednesday afternoon.

Pathology.

TUESDAY, SEPTEMBER 6TH.

Dr. E. O. Shakespeare, of Philadelphia, reported an

EXPERIMENTAL INVESTIGATION ON THE CAUSE OF TETANUS.

He gave a detailed account of numerous experiments made between August 1st and September 4th of the current year, and offered the following conclusions drawn from these researches:

1. Traumatic tetanus of the horse and mule is at least sometimes, if not always, an infectious disease transmittable to other animals, and, therefore, possibly also to man; and during the progress of this disease a virus is elaborated and multiplied which is capable of producing the same infectious disease in some other animals when placed beneath the dura mater of the cerebrum.

2. This virus is contained in the medulla and spinal cord of the animal suffering the disease. It is capable of being strengthened in virulency by inoculation *sub dura cerebri*, from rabbit to rabbit, like the virus of hydrophobia, and, as in the latter disease, is also capable of attenuation by exposure for a sufficiently long time to the action of dry air at a temperate or summer heat; and, again, like rabic virus, its effects are far more intense when it is inserted *sub dura cerebri* than when injected under the skin or between the muscles of the body.

3. The author reserves his conclusions concerning a prophylactic effect of inoculations of the attenuated virus until the completion of experiments which are at present in progress.

He then drew the following conclusions from his own experiments correlated with those of Nicolaier, Carle and Rattone, Rosenbach, Ferrari, Flügge, and others.

1st. Traumatic tetany of the lower animals and of man, at least sometimes, possibly always, is a specific infectious disease due to the action of a specific infectious virus, which exists in the tissues at the seat of infection, in the blood, and in the central cerebro-spinal nervous system.

2d. In view of the experimental evidence which we possess at present, and of many unassailable observations of surgeons and veterinarians, there seems to be ample warrant for the admission, that not infrequently tetanus in man is acquired directly or indirectly from some of the domestic animals, notably the horse, which surround him.

Drs. D. E. Salmon and Theobald Smith, of the Bureau of Animal Industry of the U. S. Department of Agriculture, presented a report of some

EXPERIMENTS ON THE PRODUCTION OF IMMUNITY BY THE HYPODERMATIC INJECTION OF STERILIZED CULTURES.

The experiments were carried out as follows: Culture tubes containing about 10 c.c. of beef infusion 1 per cent. peptone, were inoculated with hog-cholera bacteria and placed in the incubator at 93.2° to 96.8° F. After a certain number of days, varying from three to ten, the tubes were exposed to a temperature of 136.4° to 140° F., for about one hour. Inoculation of fresh tubes showed that the bacteria had been destroyed. This test was always resorted to, to make sure that no living bacteria

were injected. From 1 to 1.5 c.c. of this culture liquid was injected with a hypodermatic syringe beneath the skin of one pectoral muscle. This injection was repeated once or twice. Some days after the last injection, the bird was inoculated with living bacteria. About ¾ c.c. of a beef infusion peptone culture was injected beneath the skin of the other pectoral or into the superficial layer of muscular fibres. The vaccinated pigeons remained alive and well, the control pigeons nearly all died.

The conclusions drawn from these experiments were as follows: The birds are protected by the injection of sterilized cultures so as to resist a fatal dose of living bacteria. The sterilized cultures contain only the products of bacterial growth. Among these the ptomaine-like bodies—some of which we now know owing to the researches of Brieger, are very likely the agents that produce immunity.

Diseases of Children.

TUESDAY, SEPTEMBER 6TH.

DR. VICTOR C. VAUGHAN, of Michigan, read a very interesting paper on

THE USE OF COW'S MILK IN THE FEEDING OF INFANTS.

He pointed out the necessity of resorting to cow's milk; the care of milk used in infant feeding; the fermentations that occur in milk; the development of poisons in milk, such as tyrotoxicon; the preservation of milk; the chemical differences between the milk of woman and that of the cow; and the proper use of prepared milk foods.

In regard to the use of digestive ferments in cow's milk, he thought that in strong children they need not be given, that in weak children they must be used, but only partially, since all the work must not be taken from the stomach, which in that case would soon loose its power.

In reply to an inquiry, whether he preferred to use milk from a herd or from a single cow, he replied that the milk from the herd is perhaps the best. He called attention to the fact, however, that one diseased cow's milk would, in the course of a few hours, change that of the whole herd into an equally poisonous mass.

DR. BOOKER, of Baltimore, advocated sterilization by heat, before using milk obtained in cities.

DR. J. LEWIS SMITH, of New York, asked Dr. Vaughan his opinion in regard to the use of farinaceous matters in cow's milk to prevent too solid clotting of the casein.

DR. VAUGHAN expressed himself as unable to make any reply to this question. He believed that cholera infantum is probably, in many cases, due solely to the presence of tyrotoxicon, developed either before or after the introduction of the milk into the stomach. He detailed experiments on cats, in which, after the administration of the poison, symptoms closely resembling those of cholera infantum asserted themselves.

DR. W. P. NORTHRUP, of New York, read a paper on the

ANATOMICAL CHARACTERISTICS OF MEMBRANOUS CROUP AS OBSERVED IN FATAL CASES IN THE NEW YORK FOUNDLING ASYLUM.

He analyzed a series of cases observed post-mortem in the Asylum, with reference to the onset of the affection and the location of the membrane. The cases cover a period of five years. The greatest mortality was between two and three years, at which age 36 died out of 90 cases. Most of the cases showed an extension of the membrane into the bronchi. Autopsies in intubated cases showed only a rubbing off of the epithelium of the surface. In some cases the wearing of the tube for two or three days caused ulceration of the mucous membrane opposite the lower end of the tube, in some cases even the cartilages being affected. The ulceration is due to frequent friction and intermittent pressure due to swallowing. Some cases died from pulmonary collapse because of bronchial occlusion. Sometimes death was due to pneumonia caused by an extension of the inflammation by continuity. The best test for diagnosis of pneumonia post-mortem is to attempt inflation of the affected tissue; if it inflates, collapse is indicated; whereas, if it remains solid there can be no doubt of pneumonia. He did not believe that septic pneumonia was occasioned by the use of the O'Dwyer tube. He experimented with milk and bone charcoal, causing intubated patients to swallow these and finding no evidence of either in the lungs of the cases that died. This shows that there is little or no probability of producing living inflammation by food falling through the tube into the trachea and producing pneumonia. He summarizes his views as follows:

The cases here studied are 116 in number, 90 of which were sporadic and 26 epidemic. They all occurred in the New York Foundling Asylum, an institution which has the constant care of 1800 children from the ages of a few weeks to five and seven years.

2. In the sporadic cases, the larger, great tube of O'Dwyer caused no ulceration worthy of consideration.

3. In the epidemic cases, numbering 26, there were 5 serious ulcers.

4. The causes of death have been mostly extension of pseudo-membrane to the bronchi and pneumonia.

5. He had been able to find *no* evidence that milk or other foreign material has found its way into the lungs. The pneumonia is broncho-pneumonia and not "schluck-pneumonie."

DR. JOSEPH O'DWYER, of New York, then made some remarks on

INTUBATION OF THE LARYNX.

He began his experiments, he said, with intubation in 1880. He was induced to devise his tube because of the prejudice against tracheotomy at the institution with which he was connected, and the inability of the staff to present a single tracheotomized case that had recovered. "Like hundreds of others before," he at first used the flexible catheter and gradually shortened it for convenience and comfort to the patient. An essential principle in making them self-reta ning is to have them larger below than at the glottis. He then exhibited the tubes, and showed how to introduce them. A large, tightly fitting tube will be self-retaining because of firm and equal pressure from all sides. It was by using such a tube that Bouchut had no trouble in its insertion. The same kind of a tube, because of the great pressure it exerts on the surrounding parts, gave Trousseau the only reason founded in fact, that could be adduced

against intubation. The small tube formerly used is objectionable for two reasons: one being the danger of its slipping into the trachea, and the other from overlapping of the upper end of the tube by the swollen mucous membrane. The present tube with the large shoulder prevented both these accidents. The advantage of the backward curve on the lower end of the tube, is to prevent the ulcerations found at the base of the epiglottis, which straight tubes have been known to cause.

He favors small tubes. When first seen they are supposed to be too small to allow of comfortable respiration. They are, however, ample. The objection to the large tubes is the danger of ulceration from pressure. He steadily reduced the antero-posterior diameter of the tube to the present size, until he no longer noticed laryngeal ulceration as a sequel of its use. It is not necessary, for comfortable breathing during rest, to have the respiratory channel as wide as it is normally found. He spoke of the mechanism of cough and the necessity for closure of the glottis and compression of the intrapulmonary air before its expulsion, so as to give it force enough to produce sufficient friction to carry away the material on the surface of the bronchial mucous membrane. Coughing or nose-blowing is impossible, unless preceded by closure of the glottis. In case of dyspnœa in an intubated case, removal and reinsertion of the same tube give marked relief, and if a larger tube is inserted credit for the relief is awarded to the larger tube. This is evidently incorrect. There are still two very serious defects to be overcome in intubation: 1st, difficulty in swallowing food, and 2d, difficulty in the elimination of membrane.

When established, perfected, and matured, this operation will remain unsatisfactory, from the complications and very nature of the disease itself. The first results, if good, will create enthusiasm; if bad, distrust.

He showed three instruments made for the extraction of false membrane, but has only tried one and that on the cadaver of a child. His was made on the principle of Otis' urethrometer. On introducing the tube it is important to have it so firmly attached to the introducer as to make them appear as a single unjointed instrument. He has never developed as much enthusiasm for the operation as others have. Thinks better results have been obtained by the conjoined use of the bichloride of mercury and intubation, than by intubation alone. The best results on record were obtained by Dr. Frank Huber, of New York, in this way. This paper was read on June 7, 1887, before the New York Academy of Medicine.

Intubation is better than tracheotomy because it avoids cutting, and can, therefore, be earlier and more frequently performed and thus save more lives.

Dr. F. E. Waxham, of Chicago, then read a paper on

INTUBATION VERSUS TRACHEOTOMY IN THE TREATMENT OF CROUP.

Modified and new intubation instruments were exhibited in connection with this paper. A laryngeal dilator composed of diverging blades or bent scissors shanks was shown and has been successfully employed to dilate the glottis temporarily in place of the tube. An automatic rubber epiglottic attachment was shown attached to one of the tubes. A statistical table of operators, number of operations, and number of successes and failures was read in detail. Out of a total of 1007 cases 269 recoveries had taken place.

Dr. C. G. Jennings, of Detroit, said his experience had been the reverse of that of the readers of the papers. Has performed 37 primary and 3 secondary tracheotomies. 26 of the 37 primary recovered. He had had 9 intubations and all have died. Of the 3 secondary operations after intubation, all died. He was compelled to favor tracheotomy in preference to intubation, yet he was forced to admit that Dr. Waxham's statistics spoke better for intubation than they did for tracheotomy.

In tracheotomy there is the advantage of having direct access to the diseased locality. In intubation this is not so. Deglutition is easier after tracheotomy than after intubation. Tracheotomy is particularly successful in those cases in which it is performed toward the end of the disease, and where the membrane has extended into the larynx. He has found after treatment in intubation cases fully as arduous as after tracheotomy.

Dr. J. Lewis Smith, of New York, asked if all of Dr. Jennings' intubation cases had been relieved promptly of their dyspnœa.

Dr. Jennings said they had with two exceptions.

Dr. Smith asked if intubation did not allow more time for tracheotomy.

Dr. Jennings replied that he thought it had to precede tracheotomy with the use of the tube.

Dr. W. P. Northrup, of New York, said that in 33 cases he never had any trouble whatever. One of his cases that had the most trouble of all in swallowing, recovered, while some of those that died could swallow perfectly. He thought that the interference with deglutition is the only drawback to intubation.

Dr. T. J. Pitner, of Jacksonville, Ill., though a believer in the operation of intubation, did not think Dr. Waxham justified in saying that all of those that recovered by this means according to some of his statistics would otherwise certainly have died. That was something no man could say.

(To be concluded.)

AMERICAN GYNECOLOGICAL SOCIETY.

Twelfth Annual Meeting, held at New York, September 13, 14, and 15, 1887.

(Specially reported for The Medical News.)

First Day, September 13th.

Morning Session.

The Society was called to order at 10.30 by the President, Dr. A. J. C. Skene, of Brooklyn.

Thirty-one Fellows were present, and about fifty invited guests, among whom were Doctors Ferrier, Doléris, and Apostoli, of Paris; Dr. Grant Bey, of Cairo, Egypt; Dr. Bauga, of Bombay; Drs. Graily Hewitt and Bantock, of London, England; Dr. Simpson, of Edinburg; Dr. Martin, of Berlin, and Dr. Cordes, of Geneva, Switzerland.

Dr. Fordyce Barker, of New York, made the following

ADDRESS OF WELCOME.

Mr. President, Fellows of the American Gynecological Society, and friends who honor us with their presence:

The pleasing duty has been assigned to me by our Committee of Arrangements to welcome you in behalf of the resident Fellows of New York and Brooklyn, and in behalf of the Academy of Medicine, and of our affiliated societies having the same aims and objects.

I feel warranted in referring to the success of our Society in one of its aspects. It has brought its Fellows into intimate relations of warm personal regard. It has made us acquainted with, not only the mental calibre and acquirements of our Associate Fellows, but it has made us to know their winning and lovable personal qualities.

Our discussions have not been wanting in sharp criticisms or freedom in pointing out supposed errors in the statement of facts—or absurdities in reasoning—or fallacies in deduction—or the futility or danger of suggested plans of practice or operation. But not in a single instance that I have known has there appeared in our discussions anything bearing the semblance of personal rancor, of the sting of venom, or a desire to wound, or of an ignoble ambition to triumph by sharp personal repartee, but the courtesies of debate have always been maintained on a high level. Neither has the time of our meetings been wasted in listening to profitless and wearisome discussions of personal claims to priority. All of our Fellows seem wisely to have decided in their own minds, that their present and posthumous reputation will rest on the aggregate of good work they accomplish, and not on the single merit of being the first to suggest a plan of treatment or a special operation. All know that now claims to priority of whatever nature are sure to be contested, and possibly to be confuted at no very remote period, although perhaps after the claimant "has joined the majority," and is no longer able to defend or explain his claim. If by referring to these merits, I lay myself open to the charge of assuming that the American Gynecological Society is made up of gentlemen, I confess to the justice of the charge, and shall "die impenitent," appealing to the record of our discussions in the ten volumes of its transactions in proof of the validity of my assertions.

As modesty is well known to be our most prominent national characteristic, I have felt justified in saying this much, in order that our distinguished foreign guests who have honored us by accepting our invitations, and have come more than three thousand miles to do so, may better know the company they are to meet. To them I will say, many of you are well known to many of us personally. All of you are well known to all of us by the good work that you have done. We give you a warm welcome, with the anticipation that the interest of this meeting will be largely enhanced by your participation in its work. We hope that you will find our hospitalities acceptable and agreeable, and we feel assured that you will leave behind you a warm place in our hearts, which will bind us in as close affinity in our personal affections as we now are united in sympathy in our professional work.

We welcome also our friends of this city and from other parts of the country, whose interest in the subjects to which we are devoted, brings them here to watch our proceedings and to stimulate us to our best efforts. Your presence serves to imply a knowledge through the medium of our published *Transactions* of the work which the Society has done before, and an approval of it. We trust that your interest will be increased by this meeting.

DR. THOMAS ADDIS EMMET, of New York, then read a paper entitled

A STUDY OF THE CAUSES AND TREATMENT OF UTERINE DISPLACEMENTS.

He stated that he had long before pointed out that in every woman there was a "health line," or normal plane for the uterus; as long as the organ occupied that plane the circulation was unimpeded and the veins did not become over-distended. The disturbance due to prolapse of the uterus might also be produced by lifting the organ above the health line. Both ante- and retroversion, not due to inflammatory processes, might be unaccompanied by marked discomfort—in fact, a retroversion pessary with a long posterior curve, while it actually increased the anterior displacement, gave relief simply because it elevated the cervix to a higher plane. In short, the suffering in cases of displacement was not due to the displacement itself, but to extraneous causes, especially to periuterine inflammation. Whether the uterus was raised or lowered in the pelvis in consequence of the cicatricial contraction following inflammatory processes, the traction was always exerted at the only fixed point—*i. e.*, the neck of the bladder, whence the frequent desire to urinate. Prolapse was the usual displacement because of the increased weight of the uterus resulting from the impeded circulation.

Since the Fallopian tubes were attached to the fundus uteri at a higher point than the attachment of the broad ligament to the side of the pelvis, an inflammation confined to the peritoneum covering the tube would shorten the line and thus depress the uterus in the pelvis; if the inflammation extends from below upward the reverse would be the case, *i. e.*, the resulting adhesions would tend to elevate the organ. An inflammation of the connective tissue between the folds of the ligaments would result in destruction of that tissue, and extending to the peritoneum forming Douglas's pouch, would form adhesions which would raise the uterus; as the folds of the ligament on one side became separated, the organ would be drawn to that side, thus causing a lateroversion. If, on the other hand, the peritoneal covering alone was involved, prolapse and retroversion would result. Inflammation confined chiefly to the peritoneal covering of the utero-sacral ligaments, caused elevation of the cervix and anteversion.

In retro-displacement, the fundus was usually movable and could be replaced with the finger; after restoring the uterus to its supposed normal position, the operator would be able to feel a pulsating vessel, which showed that the circulation was obstructed in consequence of the adherent peritoneal surfaces and vessels being put on the stretch. If now a sharply curved pessary was introduced, there would soon be so much pain that it would be necessary to remove it; but if an instrument with a moderate curve was used, which simply corrected the prolapse, it could be worn longer, and would relieve the traction on the neck of the bladder, but in the end both pessaries would certainly cause peritonitis if allowed to remain long *in situ*.

In anteversion, from inflammatory shortening of the utero-sacral folds, we might indeed relieve the patient by means of a retroversion pessary which corrected the prolapse, but here, too, fresh inflammation would be the consequence of prolonged pressure on the affected liga-

ments. What then was the general practitioner to do? It was better not to attempt to correct the displacement, but to be content with hot water injections and the application of iodine and glycerine pads. Such cases were better treated in a hospital.

He then called attention to the peculiarities of the pelvic circulation, and to the fact that traction on the tortuous veins sufficient to straighten them results in dilatation of these vessels. Artificial traction on a healthy uterus causes an obstruction of the circulation; when the uterus is entirely procident, compensatory dilatation of the veins occurs. The arteries also lose their tone in consequence of extreme traction, and their calibre becomes diminished, thus relieving the over-distended veins. The pelvic connective tissue supports the vessels; a local peritonitis, by exerting undue traction on the connective tissue at one point, impairs its elasticity at another, and thus weakens the vascular support. He referred, in this connection, to so-called laceration of the perineum; the pelvic fascia is so injured that the vessels lose their proper support by reason of the general relaxation of the connective tissue. No operation on the perineum can give relief unless the normal tension is restored.

The object to be aimed at in fitting a pessary is to give just enough support to the over-stretched connective tissue to relieve the obstruction to the circulation. If a non-adherent uterus is replaced and the fascia is sufficiently supported, the natural elasticity of the periuterine tissues will keep the organ in position. He is accustomed to introduce a few cotton pledgets, simply to elevate the uterus to its normal plane, and thus to relieve the congestion; but he disapproved of the practice of introducing a large quantity of cotton, with the patient in the knee-chest position, since this is more likely to increase the existing irritation.

He stated in conclusion that, although he had pointed out the limited range of usefulness of pessaries, he is anxious that his views should not be misrepresented. In suitable cases nothing can take their place, but they should not be used without a clear understanding of just what they are intended to accomplish. A displacement of the uterus is rather to be regarded as a *symptom*, the cause of which must always be sought for. If this is done in every case, much less harm will result from the ignorant use of pessaries. Gynecologists were too apt to omit to search for evidences of pelvic inflammation, and to use the sound recklessly to correct a displacement, when the uterus can be replaced just as well with the finger.

DR. GRAILY HEWITT, of London, on being invited to discuss the paper, said that the subject of uterine displacement had occupied his attention for several years. He agreed with the spirit of Dr. Emmet's paper, but it seemed to him that there must be some difference between English and American women with regard to the relative frequency of pelvic cellulitis in cases of displacement. He had not detected it in many of his own cases, or else he had overlooked it. With reference to the causes of displacement, he thought that the reader had given a limited view of the matter, since he had touched on inflammatory causes only; but he inferred from the latter's book that he believed in the existence of others. Dr. Hewitt thought that the general causes were highly important, especially with regard to the prophylactic treatment of uterine affections. Dr. Emmet had explained the sufferings of patients as due mostly to the pelvic inflammation. He thought that an important fact was the influence of flexions as causing obstruction to the circulation, and hence pressure on the nerves. The mere straightening of the uterus relieved the patient, perhaps more than the elevation of the organ. The speaker had met with cases of flexion in which there was extreme sensitiveness at the region of the os internum, and this pain was removed on straightening the uterus with the sound. It must be that the relief was due to the removal of the flexion. The speaker agreed with Dr. Emmet as to the unjustifiability of using pessaries when there was acute inflammation; but, when old indurations were present they might be valuable in removing such exudations. No man should use pessaries unless he thoroughly understands them. It was necessary to be familiar with the past history of the patient, as well as with the present local condition, before good could be done with these instruments.

PROFESSOR SIMPSON, of Edinburgh, said that the question of uterine displacement was especially interesting to teachers of gynecology. Dr. Hewitt had said that American and English women differed as regards the frequency of pelvic inflammation. The speaker differed from him, he believed that the diagnosis of gynecologists was modified by their individual opinions, since one man found inflammation very often, and another seldom. Dr. Emmet had taken a limited view of uterine displacements, since his paper dealt only with the condition in women who had borne children. Many sterile women had displacements. Pain was not the only symptom. In many cases it was necessary to replace the uterus in order to favor impregnation. We must not forget that in a certain class of cases no history of inflammation could be found. There seemed to be a growing disposition to abandon pessaries entirely; but, at the same time, even those who decried them, had certain cases in which they could not dispense with them.

DR. HEWITT explained that he did not express any positive opinions as to the difference between English and American women.

DR. BANTOCK, of London, said that he had been deeply interested in the paper, but he did not agree with the reader as to the frequency of pelvic inflammation. He thought that, as Dr. Simpson had said, a good deal depended upon the personal bias of the examiner. It had been shown that many cases of supposed pelvic cellulitis were really cases of salpingitis and peritonitis. The speaker was pleased to find that Dr. Emmet did not reject the use of pessaries. There was no advantage in trying to find out the exact cause of a uterine displacement; the patient wished to be relieved of her symptom, and in most cases this could be done by the *proper* adjustment of a pessary. Many men who used pessaries did not understand how to adjust them. In retroversion, following childbirth, no other instrument was necessary except the introduction of a pessary. The speaker always replaced the uterus with a sound, unless the organ was very tender, when it was necessary to relieve the inflammation first. When it was adherent, the pessary would not only be useless, but even injurious.

DR. EMMETT closed the discussion by saying that he

had not intended to disregard the ordinary causes of displacement, but only to discuss one which was little recognized. The failure to recognize cellulitis was due to the fact that patients were not examined by the rectum. He said that he had used the word "honest" purposely. He believed that many men used pessaries in this country who did not understand them and did more harm than good. No man used pessaries more than he did, but it was important to be able to distinguish cases which were unfit for them. He believed that there *was* more pelvic inflammation here than there was abroad. This was due to the fact that young women in America went into society earlier and were more exposed. Pelvic peritonitis was very frequent in young women and led directly to sterility. Displacements were common in young married females and often corrected themselves under the use of hot injections alone.

Dr. Samuel C. Busey, of Washington, read a paper on

CYSTOKOLPOCELE, COMPLICATING LABOR AND PREGNANCY.

Cystokolpocele, or prolapse of the bladder, might be partial or complete, the latter blocked up the vaginal outlet. The size of the tumor depended more or less on the amount of urine in the bladder. Little attention had been given to this condition as a complication of labor. The literature was very scanty, only six cases of cystokolpocele complicating pregnancy having been reported in detail; one of these had occurred in the practice of the author.

He was called to attend a patient advanced in pregnancy and on making a vaginal examination was unable to find the cervix, the fingers entering a large, soft, blind pouch. The woman had not passed any urine since the previous day. On emptying the bladder, the tumor disappeared. The true condition ought to be sus ected when there is dulness over the suprapubic region associated with the presence of a soft fluctuating tumor in the vagina, which disappears on emptying the bladder. Cases of cystokolpocele complicating labor were more numerous, the reader having collected thirty-five. The first stage was rendered long and painful, exhausting the patient. Errors in diagnosis are frequent. The bladder has been tapped under the supposition that it was a hydrocephalic head, and the bag of waters.

The etiology of the condition was mainly multiparity. The relaxation of the pelvic viscera led to vesical prolapse, but there must be some other cause. Hard work, muscular effort, etc., were active factors. Pendulous abdomen, relaxation of the vaginal canal, and retention of urine should also be mentioned. In a few instances cystocele had existed before pregnancy. Contraction of the pelvis had been mentioned as a possible cause. Lingering labor was the principal symptom, the pains being sharp and frequent, but ineffectual, the pain being referred to the bottom of the stomach. Straining and tenesmus characterized the pain, as distinguished from ordinary labor-pains. There was usually a frequent desire to urinate. There might be no enlargement above the pubes. As labor advanced, the patient experienced severe pain and dragging sensations in the lower part of the vagina. On making a vaginal examination, a soft, fluctuating, tender tumor was felt in the anterior vaginal wall, which became relaxed during the interval between the pains. Sometimes the os could be felt above the tumor. In lateral displacement a tumor would be felt on the lateral wall of the vagina, which would not block up the entire canal. The cystocele might assume an hour-glass shape, when the diagnosis was often difficult. Discharge of the contents of the tumor through the urethra was the only positive evidence of its character. The cystocele might refill during the labor.

The condition was to be distinguished from the amniotic sac, a hydrocephalic head, pyokolpocele, vaginal cysts, and ovarian cysts. Evacuation of the bladder by means of a soft catheter at once reduced the obstacle to delivery. It might be necessary to elevate the cystocele with the finger. No special treatment was necessary after delivery.

Dr. Goodell, of Philadelphia, said that he had met with two cases of cystokolpocele, one before and one during labor. He was completely deceived in the first instance, thinking that he felt the child's head, and that labor was in progress. There was severe vesical tenesmus, resembling uterine pains. On making a second examination the os uteri could not be reached, and the diagnosis was then clear. The bladder was rapidly emptied.

In the second case the pain was very severe, and the tumor was so large as to obstruct the passage of the head. It was impossible to pass the catheter until the head had been elevated by means of forceps. The speaker believed that in these cases there was some contraction of the pelvis, so that the sacral portion of the head was arrested, and the pubic portion, revolving with each pain, carried the bladder down before it.

Afternoon Session.

Dr. William M. Polk, of New York, read a paper entitled

ARE THE TUBES AND OVARIES TO BE SACRIFICED IN ALL CASES OF SALPINGITIS?

Salpingitis is to be defined, he said, as "the disorder whose most marked clinical expression is found to be those periuterine inflammatory masses so commonly met with when palpating the pelvic contents, which, until recently, were regarded as the sign manual of cellulitis." It is the affection heretofore treated as an inflammation of the periuterine cellular tissue. The inflammation is similar to that in the pleura, and results in either a serous exudation, which is absorbed, sometimes leaving slight adhesions, a sero-fibrinous exudation, which leaves numerous firm adhesions; or, finally, a collection of pus. The ultimate results of this salpingitis are determined by the strength and distribution of the resulting adhesions; if these are slight, the damage is slight. Displacement and imprisonment of the uterus and its appendages is the most important result whereby their functions are impaired.

The changes in the tube are endo- and peri-salpingitis, with resulting pyo-, hydro-, and hæmato-salpinx; while in the uterus there may be simply chronic endometritis or areolar hyperplasia. The ovaries, if buried in adhesions, may present interstitial changes, which finally lead to atrophy. But the ordinary form of salpingitis

maims, rather than destroys, the tubes, the maiming being due not so much to the primary disease as to the resulting adhesions.

The clinical evidences are those of localized peritonitis, which are followed by special symptoms resulting from the impairment of function in the organs involved.

These statements, the reader added, were based upon observations made both at the bedside and in the dead-house. In fifty cases, after making a careful physical examination, the abdomen was opened and the pelvis was then examined both from above and below, one finger being within the abdominal cavity and the other in the vagina. In fifty other cases the pelvis of the living subject was carefully examined, and then the results in the two series were compared, when it was shown that the local condition in both corresponded to the same disease—in short, the condition was that described in text-books as "pelvic cellulitis and peritonitis."

As regards the prognosis of salpingitis, it may be said that the majority of the cases recover, the death-rate being small in non-puerperal cases. Of course, recovery means restoration of health, not necessarily restoration of the function of the affected organs.

It was formerly said, that a woman with pyosalpinx was in danger of her life; but no distinction was made between the slighter and more serious cases. A year ago he would have performed laparotomy in all these cases. Since then he had met with numbers of specimens in which the *adhesions* were the principal trouble. The principal symptom was severe pelvic pain or dysmenorrhœa; recurrent peritonitis was not particularly frequent. It seemed as if the adhesions were the principal cause of the suffering, and that the pain might be relieved by freeing the adhesions. These might re-form, but if the uterus and appendages were so altered as to separate the ends of the adhesions, Alexander's operation has accomplished this result in the hands of the reader. Is it wise to leave an occluded tube without removing it? In certain cases this can be done. The reader had operated eight times, breaking up the adhesions around the displaced uterus and appendages, and restoring the organs to their normal position, where they were kept by shortening the round ligament.

In conclusion, the author said that he did not deny the value of the removal of the tubes and ovaries in proper cases, but he would confine the operation within narrow limits.

Dr. Martin, of Berlin, said that he was pleased to see that the reader spoke of salpingitis generally as inflammation of the tube. Ten years ago, the speaker had called attention to the different forms of inflammation of the tube. The tube was rarely the seat of neoplasms. Carcinoma was rare, probably because of the absence of glands. Simple catarrh, being most frequent in the uterus, was also the most common inflammation in the tube. Recently micrococci had been found in the tube; gonococci were rarely discovered. Tuberculosis, as was shown by Hegar, was occasionally present. In general, the inflammations of the tube could be regarded as innocent; occlusion or adhesion to surrounding parts occurring early; but in only a small number of cases did the inflammation become general. Out of a large number of cases of salpingitis, the speaker had found it necessary to operate in only a small minority. Only after a long course of anti-inflammatory treatment should we resort to an operation. Among eighty operations he had rarely found that the principal trouble was in the tubes. He was accustomed to puncture the tube in every instance before removing it, so as to prevent the contents from entering the cavity.

Dr. Barker said that he was deeply interested in Dr. Martin's reference to the good results of general treatment. In reply to a question from the last speaker, Dr. Martin said that in cases of acute inflammation he used ice-bags on the abdomen, with opium to relieve the pain. In chronic cases he applied iodine and peat-compresses. The general health was cared for, and massage was employed. Great care must be exercised not to set up fresh inflammation.

Dr. Emmet said that he had always taught that in the majority of these cases the patient should have all the benefit of palliative treatment before an operation was performed.

Dr. Goodell said that he agreed substantially with the speakers. He was accustomed to resort to general treatment before operating. He did not understand how a collection of pus could be dispelled, even if a catarrhal inflammation could. He believed in Dr. Polk's pathological teachings, but he thought that his treatment was too heroic. After opening the abdomen, and liberating the ovaries and tubes, why not remove them, instead of trying any experiment? The patient could not become pregnant, and her instincts would not be removed by removing the organs. The speaker had thought long and anxiously on the subject. He often had gratifying results from the rest-treatment; but, on the other hand, he had been compelled to operate often against his will. He confessed that he could not tell what constituted exactly enough disease in an ovary to warrant its removal.

Dr. Bantock said that his views coincided with those of Dr. Martin. He had come to the conclusion that ordinary cases of catarrhal salpingitis did not require operative treatment. But in pyosalpinx an operation would be necessary, sooner or later; even the latter cases might be cured spontaneously. The patient's symptoms were generally due to the surrounding peritonitis. Death was seldom due to rupture of a pyosalpinx. Hæmatosalpinx was more serious than pyosalpinx. The speaker had come to be very cautious in removing the ovaries, since, in several instances, he had seen pregnancy occur in women whose organs were apparently hopelessly diseased. He did not approve of Dr. Polk's operation, since, if adhesions had once been formed, there was no reason to think that they would not reform. If the appendages were so buried in adhesions, they were probably so much diseased that they ought to be removed. In reply to a question as to his method of general treatment, Dr. Bantock said that during the acute stage of inflammation he kept the patient absolutely quiet, administered hot douches, and gave opium.

Dr. Sutton, of Pittsburg, said that the subject of tubal pathology was still *sub judice*. He thought that if we laid down the rule only to operate when there was a tumor we should certainly neglect cases in which an operation was urgently needed. If pus was present in a tube, that tube should be extirpated just as an abscess anywhere else in the body ought to be incised. How

many abnormal conditions of the tubes and ovaries would be cured spontaneously we could not tell. We must take into account the entire condition of the patient. We could not say what the result of an operation would be until months had elapsed. If the patient suffered from the presence of an ovary and tube, what was the use of leaving it? It is not necessary to discover just what the disease was; if the patient was cured, that was the main thing.

Dr. Emmet thought that in many of these cases the trouble was really due to anæmia and general depression. The woman was better after removal of the appendages, but it was due to the fact that the menopause was induced. It was a reflection on the profession to think that we must remove the ovaries in order to cure anæmia.

Dr. Wylie, of New York, said that he did not dread cases of salpingitis as he did seven years before, when he first began to operate. He selected his cases carefully, not operating in more than one out of ten. He had not ventured to perform the operation described by the reader, although in two instances he had opened the abdomen and simply broken up adhesions, since the appendages were not diseased. Constitutional treatment was not enough in these cases.

Dr. Polk closed the discussion with the remark that he had not desired to give prominence to the question of laparotomy, but to that of *mutilation*. Women had a right to retain organs which did them no harm. The main point in his paper was that the tubes and ovaries were crippled by adhesions, and were not functionally useless. He did not oppose extirpation of the organs in proper cases, but it was important to discover some way in which women could be spared if possible. None of his patients had died after the operation, so that the question of safety could not come in. Nor did the performance of Alexander's operation, in addition to the laparotomy, entail any extra risk. Every woman had the right to take the chance of saving her ovaries.

Dr. Paul F. Mundé, of New York, then read a paper entitled

DRAINAGE AFTER LAPAROTOMY.

He made the prefatory statement that, while general surgeons were unanimous with regard to the advisability of draining secreting cavities, he was surprised to find on reviewing the literature of the subject, as well as by reference to his observation of operations performed by prominent European laparotomists, how widely diverse were the views as to the necessity of abdominal drainage after the removal of adherent tumors. Some operators invariably used a drainage-tube in such cases, while others, who obtained just as good results, rarely or never employed one; among the latter were Olshausen, Martin, and Tait. Hegar omitted drainage except in cases of extensive oozing or exudation, where a quantity of septic fluid escaped into the peritoneal cavity, or when it was probable that ligated adhesions or cyst-remains might become gangrenous. Olshausen was strongly opposed to drainage, considering it directly responsible for septicæmia, tedious convalescence, and subsequent abdominal fistulæ. He, himself, had seen excellent results in Martin's clinic in cases of extensive adhesion when the tube was dispensed with. Referring to his own experience, he said that he had employed drainage in twenty-three out of sixty laparotomies, with twelve deaths, while of the other thirty-seven, in which no tube was used, only three died.

The following questions were proposed for discussion:

1. In what class of cases does drainage seem to be theoretically necessary?

2. What are its advantages, and what its dangers and disadvantages?

3. What form of drainage is the best and least dangerous?

4. What substitute can be offered for drainage, or how can the necessity for its employment be averted?

The original object aimed at by Dr. E. R. Peaslee, who first introduced the use of glass tubes after laparotomy, was to favor the escape of blood and serum from the abdominal cavity; this purpose was still effected, but practically we find at the present day that it is not always necessary to remove the exudation, which is most apt to accumulate in cases where extensive adhesions have been separated. If by our modern antiseptic methods this fluid can be rendered innocuous, drainage may be dispensed with, since the peritoneum is able to absorb it without injury to the general system. However, as long as there remains any doubt as to the aseptic character of the fluid, drainage is indicated, at least theoretically.

Concerning the justifiability of drainage, there could be no question that it was criminal negligence to allow septic fluid to remain within the peritoneal cavity, when it could be removed. In considering the dangers we must bear in mind how much more serious a matter it is to drain the peritoneal cavity than an ordinary surgical wound. It is true that a wall of lymph was easily formed around the tube, thus separating it from the surrounding intestines and protecting the latter against external influences, but there was ample time for septic infection before this protecting lymph was thrown out. It could not be denied that the presence of the tube prevented the perfect closure of the abdominal wound, and thus added to the danger. He had often been glad that he had introduced a tube, because of the quantity of bloody serum that escaped soon after the operation; but might not this fluid have been innocuous if it had remained? Was not the danger from its presence more than counterbalanced by the added risks of septic infection, traumatic peritonitis, and subsequent intestinal adhesions entailed by the presence of the tube, as well as the alarm and annoyance caused to the patient from the frequent removal of the accumulated fluid? The tube, certainly, causes more or less irritation; in fact, he had noted the occurrence of reflex vomiting in one case, which ceased as soon as the tube was removed. After the first forty-eight hours, when the fluid had become merely serous in character, it was better to dispense with it. Abdominal fistulæ and ventral hernia sometimes resulted directly from the use of the tube.

The simplest form of glass drainage-tubes were the best; lateral perforations were objectionable, since omentum, or even small intestine, might be imprisoned in the holes. Mikulicz used a strip of iodoform gauze. The fluid could be removed from the tube by means of a rubber tube attached to a syringe; it was seldom necessary to examine the tube within twelve hours after the operation. He thought that it was often left in too

long, from forty-eight to ninety-six hours being the limit. The formation of a permanent fistula was prevented to some extent by introducing a deep suture at the site of the tube and tightening it as soon as the latter had been removed.

While he substantially agreed with Olshausen in his condemnation of drainage after laparotomy, he did not think that the latter was correct in advocating the shutting up of a portion of an adherent cyst within the cavity without providing for the escape of the fluid which must inevitably be secreted; there could be no safer plan than that of stitching the adherent sac into the abdominal wound, packing its interior with iodoform gauze, and allowing it to close by granulation. Was there any substitute for drainage? Some authorities claimed that it was unnecessary if rigid antisepsis was observed during the operation and the peritoneal cavity was carefully cleansed before closing the wound; they affirmed, and with reason, that the presence of the tube really kept up the serous exudation. Schröder, Martin, and Olshausen had found that if large raw surfaces were placed in contact they would become agglutinated without much oozing or exudation. Moreover, a small quantity of pure blood, bloody serum, or cyst fluid might safely be left within the peritoneal cavity, *provided all possibility of septic infection from without was prevented;* prophylactic drainage in these cases was not only unnecessary, but it introduced an element of danger. Where it was desirable to drain, the reader suggested the employment of a strip of gauze, which could be pushed up through the vaginal roof into Douglas's pouch. Two indispensable conditions must be observed if drainage was to be omitted, viz.:

1. The peritoneal cavity must be thoroughly cleansed by careful sponging, the viscera being protected by means of flat sponges or layers of sublimated gauze, and by washing out the pelvic cavity with an antiseptic solution poured from a pitcher.

2. Rigid antisepsis must be observed in all the details of the operation.

Dr. Martin, of Berlin, said that he did not employ drainage in ordinary cases of ovariotomy, but only where there was some complication. He used it in cases of supravaginal amputation, vaginal hysterectomy, and where large sloughing surfaces were left after the removal of adherent tumors. In the latter case, he always drained through the vaginal fornix, using a rubber tube, but he did not use injections.

Dr. Bantock said that he had long been interested in the subject. He was so confident of the value of drainage that he used it whenever there was the slightest excuse—*i. e.*, when there had been many adhesions, or there was much fluid in the cavity. He used simple warm water for washing out the abdomen, having long given up so-called antiseptics. He substituted perfect cleanliness for them. Of his last 104 cases, he has lost only three, and this success he attributed to the frequent use of the tube. He used the ordinary straight glass tube introduced through the abdominal wound, and emptied it every two or three hours. The tube should not be removed until the serum became clear and free from blood.

Dr. Gardner, of Montreal, had used drainage-tubes extensively, and was thoroughly convinced of the value of Dr. Bantock's teachings with regard to leaving them in for a long time.

Dr. Wylie called attention to the fact that the drainage-tube was useful as giving an early indication of hemorrhage after laparotomy. He agreed with Dr. Bantock in preferring a straight glass tube.

Dr. Goodell said he was sceptical as to the value of the drainage-tube. He had had several cases of ruptured colloid cyst in which the abdomen was not washed out, no drainage was employed, and yet the patient recovered. He agreed with the last speaker in regard to the value of the tube as furnishing indication of hemorrhage. At the end of twenty-four hours the drainage was imperfect, as described by the reader.

NEWS ITEMS.

The Members Registered at the Congress.—About 2600 members were registered. We append a list of the *foreign members*.

Argentine Republic.—Dr. Villa.

Australia.—Balls Headley.

Austria.—T. v. Metnitz, A. Natchtch.

Belgium.—L. Servais, R. Guilet.

Brazil.—Dr. Freire.

China.—H. W. Boone, E. T. Barbiere.

Costa Rica.—F. M. Calruck.

Cuba.—V. Galluzzo, C. M. Desvermine, Vincent Galwzza, Dorno F. Hubas.

Egypt.—Grant Bey.

France.—A. Charpentier, W. M. Ouacher, Léon Le Fort, Recamier, Kuhn, G. Apostoli, P. Englade, Q. Duprez, Villa, Dolores, Landolt, Ch. Abadie, A. Doléris, L. Keese.

Germany.—Mooren, A. Mowfin, A. Martin, P. G. Unna, H. E. Keatz, Donau, A. Olliven Busch.

Great Britain.—Grailey Hewitt, C.D.F. Phillips, W. H. Lloyd, Blandford, J. A. Marston, Brig. Surg. John Anderson, Tobin, H. D. Ellis, W. E. Balknill, W. Bowman MacLeod, J. J. Murphy, J. F. Taylor, James Buxton, R. N. Bower, Jos. Walker, W. H. Cross, J. L. Wood, Walter Campbell, W. W. Woodruff, W. E. Harding, I. E. Clifford, Charles Gaine, L. Browney, Wm. Murrell, R. Stockman, W. L. Stewart, S. R. Roberts, F. W. Pavy, Surg. Maj. G. F. Langridge, Leslie Fraser, R. M. Barr, A. Dobell, J. J. Wellford, A. Crawley, J. C. Hewlett, Nelson Dobson, Shingleton Smith, Thos. Leur, J. B. Willard, J. T. Donald, J. B. Hurly, T. N. Dolan, S. T. Riggs, Alfred Gubb, Y. R. Le Monnier, Thomas Lyman, J. B. Hilliard, J. T. Donald, J. Chapman, Henry Powers, J. C. Leach, A. P. A. Lawrence, D. Dalton, R. Marrick, W. H. Hayran, R. J. Mills, A. Ballard, W. M. Whitmarsh, H. Saville, A. Eddwares, Parkinson, J. C. Hewlett, Walton Brown, Boyd Pall, S. Willis, Roger Parker, Sinclair Coghill, Duncan McAlum, A. R. Simpson, Leishman, D. Lloyd Roberts, Chenholm, Edmund Owen, Edward East, Thos. Neville, Logan, A. W. Edis, G. Thin, John Sutcliff, W. A. E. Hippisley, Robert Hunt, John Ince, John Oliphant, Lionel A. Powell, John Sprewell, R. E. Rouse, C. B. Richardson, W. B. Tate, E. Seaton, G. G. S. Taylor, Henry Tompkins, Thomas Chapman, L. D. Alexander, J. G. McDowell, Alex. Morrison, Blair, Pollok, I. Wedgewood, W. L. Reed, R. N. Bower, D. Drysdale, I. Chapman, J. W. Longbottom, S. Swithembank, J. Swithembank, S. Benton, D. Yellowlees, Mac Gregor, Jos. Harrison, J. L.

Downe, Wood Smith, A. N. Smith, Lennox Browne, Matthews, F. Pritchard, R. H. Woodhouse, A. Hendriks, B. P. Neub, Boninger, R. Dunn, P. Galeden.

Holland.—J. G. Grevers.

Hungary.—L. V. Farkas, Jos. Korosi, Gustav A. Dirner.

Italy.—E. D. Rossi, Semmola, F. Durante, Freeman.

Japan.—Dr. Saiga.

Mexico.—F. Paschal, Alvarado.

Norway.—Ole Bull.

Poland.—Frank Graer.

Roumania.—Assaky.

Russia.—Chas. Reyher, S. Poerschkly, W. N. Korff, E. A. Homer, A. Limberg.

South Africa.—J. W. Mathews.

Spain.—Dr. Lalearda.

Sweden.—Ernest Sjoberg, G. Tillmann, X. Watraszewski.

Switzerland.—Cordes, N. Manolescu.

Turkey.—Dr. Post.

A NEW LABORATORY FOR BACTERIOLOGY AT KING'S COLLEGE.—MR. EDGAR CROOKSHANK, M.B., has been elected Professor of Bacteriology, and the plans for a new bacteriological laboratory, to be built during the vacation, have been decided on.

VACATION COURSES IN VIENNA ABANDONED.—The vacation short courses of practical instruction for medical men, which have been held for many years past during the months of August and September, are about to be stopped. The prospectus of these courses, numbering more than fifty, had already been published when this decision was arrived at.

HYPNOTISM IN TEMPERANCE REFORM.—At Soissons, France, a drunkard of local fame for inebriety, was hypnotized by a mesmerizer, and was obliged, by the "suggestions" of the latter, to refrain from drink. Whether the "suggestions" of convivial friends arising later did not undo the temporary reform is not stated.

INSANITY AND INTEMPERANCE.—There were 1626 persons of both sexes in the insane hospitals of Pennsylvania for 1886. Of this number only 2 were dipsomaniacs, 8 were opium cases, 1 of cocaine inebriety. 123 are put down to intemperance.—*Quarterly Journal of Inebriety*, July, 1887.

IN MEMORIAM.—At a special meeting of the Auxiliary Faculty of Medicine of the University of Pennsylvania, held September 5, 1887, the following resolutions were adopted:

Resolved, That this Faculty has received with the profoundest sorrow the intelligence of the sudden death of their esteemed colleague, Doctor Nathaniel Archer Randolph, late Professor of Hygiene in the University of Pennsylvania.

Resolved, That in the demise of Professor Randolph this Faculty has been deprived of a most faithful and zealous co-worker, endeared to them by the uniform courtesy and gentleness of his deportment; and that the University has lost a Professor of great merit and of brilliant promise, and one most acceptable to the students under his charge.

Resolved, That this Faculty begs to tender to the widow and family of their late colleague the sincerest sympathy and condolence in this afflictive bereavement.

NOTES AND QUERIES.

IPECACUANHA IN LABOR.

To the Editor of THE MEDICAL NEWS,

SIR: When I was a medical student, in 1879–80, my father, Dr. D. O. Baird, of Pickens County, this State, taught me the use of ipecacuanha as a uterine motor stimulant, and he informed me quite recently that he has so used it for fifteen years, and has had no cause to be displeased with its action. He considers it specially indicated when there is a full habit and rigid os. He gives it in two to three grain doses.

Respectfully, W. J. BAIRD.

BIRMINGHAM, ALA., September 7, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM SEPTEMBER 6 TO SEPTEMBER 12, 1887.

BANISTER, W. B., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for one month, with permission to apply for an extension of one month, to take effect upon the arrival at Fort Lowell, of Assistant Surgeon J. B. Girard.—*S. O. 91*, par. 4, *Headquarters Department of Arizona*, August 29, 1887.

BYRNE, C. C., *Major and Surgeon.*—Detailed as a member of the Army Retiring Board in Washington City, vice Captain Washington Matthews, Assistant Surgeon, relieved.—*S. O. 208*, par. 2, *A. G. O.*, September 7, 1887.

O'REILLY, R. M., *Major and Surgeon*, U. S. Army.—Ordered to proceed to Fort Niagara, New York, on public business, and on completion thereof, to return to his proper station, Washington, D. C.—*S. O. 205*, par. 10, *A. G. O.*, September 3, 1887.

PEELEY, H. O., *Captain and Assistant Surgeon.*—Ordered to accompany battalion of the Twenty third Infantry from Fort Wayne, Michigan, to Chicago, to participate in the International Military Encampment, to be held in that city in October next.—*S. O. 191*, par. 1, *Headquarters Division of the Atlantic*, September 8, 1887.

SUTER, WILLIAM N., *First Lieutenant and Assistant Surgeon.*—Ordered to accompany Battery E, Third Artillery, from Washington Barracks, D. C., to Philadelphia, on the 14th instant, to participate in the military parade, during the celebration of the Centennial of the Adoption of the Constitution, September 15, 16, and 17, 1887.—*S. O. 191*, par. 3, *Headquarters Division of the Atlantic*, September 8, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 3, 1887.

DEAN, RICHARD C., *Medical Director.*—Detached from duty as a member of the Examining and Retiring Boards, and ordered to Hospital, Chelsea, Massachusetts.

FLICK, GEORGE, *Medical Director.*—Orders as delegate to the International Medical Congress revoked.

SIMONS, M. H., *Surgeon.*—Detached from the "Constellation," and ordered to the Naval Academy.

ROGERS, E. F., *Surgeon.*—Detached from the Marine Rendezvous, New York, and ordered to the "Alliance."

FIELD, JAMES G., *Assistant Surgeon.*—Detached from the "Vermont," and ordered to the Marine Rendezvous, New York.

HENRY, C. P., *Assistant Surgeon.*—Ordered to the "Ossipee."

LUMSDEN, G. P., *Passed Assistant Surgeon.*—Ordered to the "Boston."

ATLEE, LOUIS W., *Assistant Surgeon.*—Restored to duty.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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NINTH SESSION, WASHINGTON, 1887.

THE TREATMENT OF RECENT CASES OF INSANITY IN PRIVATE AND IN ASYLUMS.

An Address delivered in General Session, September 7, 1887.

BY G. FIELDING BLANDFORD, M.D., F.R.C.P., OF LONDON.

HAPPY is the psychologist who is not concerned with his patients till he receives them within the walls of his asylum. Many of the physicians of our large public institutions are thus fortunate. They do not see or hear of those they are about to treat till they are admitted. They have not to advise removal, to write certificates, to plan means of conveyance. They receive them only in hospitals filled with the best contrivances for the care and cure of disease of every kind, and they can apply themselves without drawback or hindrance to the task.

Very different is the lot of a consultant summoned to see a patient who has become insane at home, or to chase him from place to place and examine him, perhaps in an assumed character, in order to advise a plan of treatment. Although anxiously consulted by the friends, his advice is as often opposed as adopted. Every conceivable objection is urged against his proposals and he is supposed to carry about with him some potent elixir which, without any restraint, will speedily disperse the cloud and bring back the sunlight of reason.

The object of this paper is not to discuss the treatment of the chronic or incurable insane but that of recent cases only, which are for the most part somewhat acute, not admitting of question as regards the insanity, but in which prognosis rather than diagnosis will play the most important part. We have to consider, when called to an acute case of mania, whether it is likely to be of brief or of lengthy duration, and where and how we can deal with it.

Recent insanity is a very curable disorder, as statistics from all quarters prove, and it behooves us to place the sufferer under such conditions that the cure may be effected as surely and speedily as possible. To the majority of cases a well ordered asylum affords the best means of treatment, for many it is a necessity, and removals ought to be urged in the strongest terms. But from time to time patients come before us whom, for various reasons, we wish to save from the stigma which, rightly or wrongly, is attached to one who has been an inmate of an asylum. This point is sure to be strongly brought up by the friends, and it is one not lightly to be put aside. Many fathers of families may be seriously damaged in position or prospects, or may even lose the post they hold. Some may be lads, or young girls at the outset of life, others young mothers in their first confinement. The reputation of having been in an asylum will never be lost by any one of these. The public attaches but little importance to a person being sent away ill to the country, or the seaside. If sent to an asylum it is quite another matter. In a practice of some thirty years I have seen many recover from a brief, though acute, attack of insanity, either at home or in a lodging or house suitable for treatment. My time does not allow me to enumerate even a fraction of such cases in anything like detail, but I wish to state very briefly some points which may help us to determine the prognosis and afford a hope that the malady will soon pass away. That this passing mania is recognized by psychologists is certain. Its name, *mania transitoria*, is adopted by many and well expresses the fleeting nature of the attack.

The chief point of prognostic value is the suddenness of the attack. It may come on, with scarcely any warning, in the course of a few hours, and in that brief time may develop symptoms of a very violent and acute character. There may or may not have been premonitory symptoms. This will depend very much on the cause—an exciting cause—lighting up the disorder in a brain prone to "instability" or "explosiveness." The illness comes on suddenly; we may hope that it will, if not as suddenly yet at any rate in a short time, pass away. I have known a young lady pass into chronic and incurable mania of the worst kind, whose malady commenced in the most sudden way and who was at once placed in an asylum. It was not, therefore, for want of skilled treatment that she did not recover.

Some guidance may be derived from the cause of the attack, if we are so fortunate as to be able to put our finger on it. If the cause is recent, not spread over a long period, but definite and rapidly producing its result, it is to be hoped that by removal of it, the effect may in a brief time subside.

Such a cause may be a sudden mental shock or fright; the loss of a relative, or a surgical operation. Here the suddenness of the event upsets the unstable equilibrium of the individual, and, although the cause may not be removable, as some are, yet the equilibrium is regained by the mind becoming by degrees able to contemplate the event, or being distracted therefrom by change of scene or surroundings. Another potent cause is religious excitement. Probably most of my hearers have seen women—aye, men too—attacked by hysterical mania after attending revival meetings and exciting religious services of all kinds. We may hope that in such persons the symptoms will quickly abate. I have seen several women, not young, but elderly, who have had sharp attacks of mania after a hot course of spiritualism, attendance at spiritualistic *séances* and the like. Two I have encountered lately. They were as violent cases of mania as one often meets with, but both got well in the course of two or three weeks without ever being removed from their own houses.

Another cause of sudden maniacal attacks, which I

have gone with several times, is protracted fatigue, an unduly long walk or exposure to a hot sun for a long period.

This was to my opinion the cause in the case of an officer who had been attending the autumn manœuvres in Germany and had, for want of a horse, walked many miles in the sun on a hot day. Travelling back day and night to his command he thoroughly knocked himself up and developed an irritability which culminated in a violent and public quarrel with his superior officer, with outrageous conduct, exaltation of ideas, great personal conceit, and unmeasured and at times obscene talk. I was summoned from London, and asked to bring certificate papers for his removal to an asylum. By the time I got there he was in restraint, having been taken in charge by the authorities as a dangerous lunatic. On hearing a little about his previous history, I anticipated that the attack would not last long. So, as we had him in safe keeping, we carried him to the railroad, took him to his home in London, whence, in a fortnight, he went convalescent to the seaside.

A very long walk produced an attack of acute mania in a lady of very nervous temperament, who had had a similar attack on a previous occasion. This entirely subsided in a few days.

Very acute maniacal symptoms occasionally arise in the course or the decline of an acute disease, such as measles, scarlatina, erysipelas, pneumonia, and typhoid fever; and my friend Herman Webber has, in the forty-eighth volume of the *Medico-Chirurgical Transactions*, published the particulars of seven cases of this form, to which he has given the name of the delirium of collapse. He remarks that the delirium commences almost always on waking from sleep, and at a time when the disorder is declining, not when the temperature and the fever symptoms are most prominent. In his experience, the mania lasted for a short time—from eight to forty-eight hours—and all recovered. My own experience has not been quite so fortunate, and I have seen some who have not recovered quite so quickly, but still the majority do, and we may give a favorable prognosis. The occurrence of such mania, just as an illness is declining, is an alarming event, and the ordinary sick nurse is probably very unfit to cope with it, but removal from home should not be thought of until sufficient time has elapsed to show whether the mental symptoms will be brief, or prolonged.

And here I may mention those curious cases of mania which occur in connection with gout or rheumatism. Sudden maniacal symptoms may present themselves in a man, or a woman, and the case assume the appearance of the greatest gravity, and all this may as suddenly disappear on the supervention of an attack of acute rheumatism, or gout in some joint. It is always worth while in patients with such a history to try to develop an attack of gout by the application of mustard to the feet and the administration, rather than the withdrawal, of a liberal diet.

Brief and very violent attacks of mania may follow epileptic seizures. Here we shall have the history of the case to guide us in the majority of instances. But it sometimes happens that no one has seen the epileptic fit or known the patient's previous history. It lately happened to me to have a patient sent to my hospital, who for a few days was one of the most troublesome that I ever encountered. He then rapidly recovered, and his whole term of residence was only a fortnight. It was impossible to keep this man in his own home, and his means being small, no temporary abode with requisite attendants could be provided for him.

We are all familiar with the acute alcoholic delirium to which is given the name of delirium tremens. It is not uncommon and is easily recognized. It is a transitory mania, and generally terminates within a week in recovery or death. But besides these, we occasionally see symptoms of insanity produced by drink, delusions and hallucinations very like those of ordinary insanity, but which pass away quickly if the drinking has not been prolonged. Two cases have come before me lately, and one last year. One of the two was a young lady, between twenty and thirty, who suddenly showed alarming symptoms, which subsided after two good nights, produced by chloral and bromide. The second was an old lady, whose hallucinations of hearing were said to have been produced by chlorodyne; I suspected, however, that she mixed it with a good drop of brandy. The lady was last year so bad that I thought she would have to go to an asylum. She came to me from the country, and her relatives at first concealed the fact of her having drank, but she suddenly got well in about a fortnight, and the secret came out. We shall derive great aid in our prognosis if we are able to ascertain that the patient has had previously similar acute attacks, which have passed off in a short time.

These sudden violent accessions of mania are just what we should expect to find in persons of such an unstable nature that they are ready to explode at the least thing which opposes them. Thus we see so many who are driven into furious gusts of passion by mere trifles, and for a time are hardly responsible persons. I know several who habitually have accessions of mania. One, a gentleman of great intellectual ability but nervous to a degree, has had three within my knowledge. On one occasion he was speedily placed in the asylum, which converted a brief attack into one most prolonged. The last time I saw him he was not violent, but in a kind of cataleptic seizure, unable to speak or take food. I warned his medical attendant that it would pass away, and it did entirely, in forty-eight hours or less. The officer of whom I spoke had had something of the kind before, which prompted me to keep him at home and not send him to the asylum. Of course, after repeated attacks, recovery may not, probably will not, be so speedy as after the first or second, still we may reasonably expect it to occur without any removal, or other special treatment.

In two highly nervous individuals the attacks have been more melancholic than maniacal, being of the nature of intense panic, with delusions of fear—fear that every one about was conspiring to inflict some injury, or traduce and take away their character. Two cases have lately come under my notice and both terminated almost suddenly, but owing to different causes. Each tried to escape from his imaginary persecutor, the one by running away, the other by suicide. The former succeeded and got away to his friends on the continent. Feeling himself safe in the hands of his friends, his fears and delusions vanished, and he returned after a short time to his home and business. The other gentleman

took poison, but only succeeded in making himself horribly sick, which cured him. In consequence of the suicidal attempt, the authorities packed him off to the nearest asylum. He was well, however, before he started, and wrote me a letter telling me all about it. I saw him the next day and he seemed absolutely recovered and sane.

What is there in the physical condition of the patient to aid us in our prognosis and determine the brevity, or length of the attack? The temperature will not give us much assistance. Neither in transitory nor in prolonged mania do we find any great rise in temperature. The pulse will tell us rather more. It may be quick when great excitement, violence, singing, and shouting, are going on, and when the paroxysm is over, and all this noisy excitement occurs in paroxysms, it may fall very considerably, and the pulse be not much more rapid than normal. If it does not so fall, but on the contrary remains rapid, even when the patient is comparatively quiet, the chances are the mania will be a prolonged attack, and we shall have to treat it not for days but for weeks.

The tongue, too, will give us some help. In very violent attacks it often happens that this will remain moist and clean, presenting no abnormal appearance. On the other hand, if it becomes dry, more and more furred and brown with that coat which is so indicative, not of stomach derangement, as we so often hear, but of acute nervous disorders, then we can hardly hope that it will pass away in two or three days.

There is often a great deal in one of these maniacal attacks, which, for want of a better name, we may call hysterical. As a rule they are characterized by noise and violence, rather than by fixed delusions. They begin suddenly, or after a very short period, and delusions have not had time to take definite shape. Now, in the hysterical attacks, between the intervals of violence, there is often a good deal of consciousness and attention directed to what is going on. If these increase, we may hope for a speedy return of rationality. If they decrease, if incoherence and inability to converse increase, and if delusions are manifest, then the prognosis of speedy recovery will be unfavorable. This hysterical state and these hysterical symptoms will last some time, not varying very much and without any increase of the graver symptoms. Yet we know certainly that they will pass away, because there is so much reasoning power at one time, though with great excitement and violence at another. We may have reason to suspect that a good deal of the latter is put on and is to be met by moral control.

Treatment will often aid us in the prognosis of these cases. Sleeplessness is a main feature in many of them, and it not infrequently happens that, after a long sleep produced by a narcotic, the patient wakes recovered, or so nearly so that we are no longer anxious about him, precisely as we see men recover in delirium tremens. Now for the producing of sleep, what a number of medicines we have at hand! When I began to practise, there was nothing but opium and its compounds, and to administer opium, or morphia to a patient in this stage would almost certainly have the effect of not producing, but of preventing sleep. But now there are the bromides, urethan, paraldehyde, chloral hydrate, hyoscine, hyosciamine, and others with which you are acquainted. If a usual dose of one of these produces a refreshing sleep, and the sufferer awakes with his mental symptoms lessened, his mind clearer, and excitement diminished, our hope of a speedy termination may be strengthened accordingly.

But if the maniacal attack does not subside in a few days, or in a week, and it appears probable that it will be an affair not of days, but of weeks, or months, what are we to do? The friends may be altogether against us in our purpose to send the patient to an asylum, and will profess their willingness to consent to any other alternative. The question, we find, resolves itself chiefly into one of cost. There are many patients, uneasy, delirious, and excited, who are not homicidal, or suicidal, or dangerously violent. By good attendants they may be nursed through an attack of mania, if the friends will defray the expense, by the orders of the physician. In nine cases out of ten they must be removed from home. Home surroundings and the appearance of near relatives are prejudicial, so that a house, or rooms must be taken and made suitable for such a case. The windows must be made safe. Bedsteads and furniture must be removed. The bed must be made on the floor, and the services of several good attendants must be secured. To harness the patient to the bedstead by his ankles and wrists and to keep him thus day after day and week after week is not treatment, though, unfortunately, it is, even now, occasionally met with and acquiesced in by friends who disdain the services of a lunacy doctor, and put up with anything rather than listen to what they know would be the advice of such a specialist. And not only will it be necessary to have suitable rooms for the patient. There must be the means of giving him air and exercise, but not in the streets of a town, but in a garden, or country fields. All this involves considerable expense, but where the case is suitable and money no object, it is often worth while to try to effect a cure by this method, and so save the stigma of an asylum and the subsequent feelings of the individual. Of course, it often happens, that the friends, although at first professing that they will do anything rather than consent to an asylum, do in time get tired of the heavy expenditure and the trouble which the management of the attendants and servants give them. Being, too, often very nervous people and born with the same temperament they cannot stand the racket any longer, and to the asylum the patient goes. But he may get well without.

There are some patients, however, who are to be sent at once, whom it is useless to treat in a single house, and who will become more dangerous by such treatment. These are persons affected, not by uneasy and active mania of recent origin, but by delusions which have gradually deepened until they are dangerous to a degree to those about them. Such cannot be kept in one room with sick patients. They require considerable exercise, the vigilance of many attendants, and the authority of a superintending physician. They demand moral control and coercion. The discipline of an asylum and the loss of liberty act beneficially upon the disorder, and the example of others is frequently of the highest service. We see, also, many patients whose malady we recognize as chronic and incurable, being often of long standing. It is a pity to let these, or their friends be impoverished by the expense incidental to a

residence outside an asylum, when to the latter they must come at last, and to one less comfortable if all their money has gone.

There is, too, one large class of moral patients, and generally paralytics, whom it is very difficult to treat out of an asylum, except in rare cases where quiet imbecility sets in at once. The restless, exalted, and often angry excitement which characterizes the early stages demands a larger room and space than a private house affords; and the feeling of intense self-satisfaction and happiness prevents their feeling restrained or chafing at their surroundings.

Passing from the acutely excited and maniacal patients, I may consider for a moment the treatment of the depressed, or melancholic. The non-asylum treatment of such has probably been tried in most instances before a resort is had to specialists. They have been sent away from home; have had rest from work, and more or less medical treatment; but the gloom has deepened, and special advice is sought. Are we to send them to an asylum? Here the question of suicidal propensity will come in. Many I hear say that the asylum is the only place for a suicidal patient. But an asylum is not an absolute safeguard against suicide, as the reports of our Commissioners show. Nothing but the persistent vigilance of good attendants will prevent it; and vigilance may be applied both out of and in an asylum. There is more than one kind of suicidal patient. Some there are who will not make the attempt unless they have a tempting opportunity, and are left alone by those who should look after them. But others will try and injure themselves all day long, even in the presence of others will they try to gouge out their eyes, throw themselves out of bed and break their bones, and, in fact, damage themselves in every conceivable way. So, again, some will refuse food, but will eat on complusion, or will allow themselves to be fed with a spoon. Others require to be fed by force, either by nasal or œsophageal tube, entailing the efforts of several people. Clearly some of these can only be treated in an asylum, while the less acute may be kept in a suitable house and, by vigilant attendants and judicious companions, nursed back to health. The attack of this melancholy, however, is very different from the short and acute attacks of mania which I have spoken of before. It is the most tedious of all the curable forms of insanity. We have to carry out the treatment, not for days or weeks, but for months. Consequently expense becomes a serious question, and poor patients have to go to the asylum, because they cannot afford the cost of a house and attendants. It is useless to attempt to cure such at home. The sight of home and home-surroundings intensifies the gloomy ideas and urges the sufferer on to suicide. It is intense egotism, self-feeling, selfishness, or whatever we choose to call it, which distinguishes so many. They will tell us that there never was such a case before, that they never can get well, that we are altogether unable to comprehend their individual symptoms. One of these patients will completely upset his home, and we order him away; but placed in a house with attendants and companions, or in a doctor's house, he may still be able to make himself seen and fix everybody's attention, and his self-importance is fostered and not diminished by the move. Place this man in an asylum of, say one hundred patients, and make him the one-hundredth part of the unit instead of one important unit, and the effect is often wonderful. Possibly he has been refusing his food and has required to be fed with much coaxing and entreating. Seated in the midst of twenty others, he takes it because they do, and no one seems particularly to care whether he takes it or not. The best medicine for these people is what I term judicious neglect.

To cure a patient's insanity without having to send him to an asylum, is a matter of great satisfaction both to one's self and to the friends of the sufferer. It is akin to the feeling of the surgeon when he saves a limb after a severe accident, or heals a diseased joint without having recourse to amputation. But I am not one of those—and this I wish clearly to enunciate—who think that all or nearly all acute cases of insanity can be treated in private dwellings.

We hear from every one who is capable of forming an opinion that early treatment is necessary, and that if a case is not treated early it will in all probability become chronic and confirmed. With these I cordially agree, and when I have spoken of mania cases treated successfully out of an asylum, it is because I wish to point out that there are some such, and that in practice we not infrequently meet with them, recognizing them amidst many others for whom an asylum is the proper place and alone can afford the proper treatment. Many must go because they have no funds and no friends. Taken care of by the State, they must go to a public institution. If we do not send the case thither it must be because we think that we can treat it as well and as successfully outside, and if our method fails and it is plain that the patient is getting worse and not better, we ought to bring it to an end and have recourse to an asylum, by overcoming the reluctance of the friends who so constantly think, not of the patient but of themselves.

It will be obvious that the limit of time allowed here does not give more than the briefest outline of the subject, which, to treat in full, would demand a chapter far exceeding that which I am able to set before you. It is impossible to enter upon the treatment of such cases, but American physicians are perfectly conversant with this, and I need not enter upon it, even if time allowed.

There is another matter connected with it, namely, the law. How far are we justified in treating our patients outside an asylum without having recourse to lunacy laws and all the apparatus of medical certificates, and orders? I am glad to be spared all reference to this question. In this country, I believe, the laws differ in different States. I can say, however, what the law ought to do. It ought to enable us to treat a case for a certain time outside an asylum, without having recourse to certificates, just as we should treat any ordinary case of illness, as the delirium of fever, or delirium tremens. In Scotland there is this power; in England there is not, and I fear that there is not much hope that there will be. I hope that here such provision exists, and that, if it does not, it will at no distant date.

I have thought fit to bring this subject before you because it is often thrown at us that lunacy doctors wish to send every patient to an asylum and have no other method of treatment. As there are many who impera-

tively demand the care of an asylum, not only that they may be kept in safety, but for cure, so are there others whose recovery may be brought about without being so sent. It is our duty to discriminate so far as we can between them. Those who suffer from transitory mania are not the dangerous class who should be sent to an asylum as speedily as possible. The delay of a few days will often not materially interfere with the after-treatment if the asylum is eventually necessary, and in this period recovery will take place. I cannot hope to have assisted you much within the limit of this paper in the diagnosis of such cases; but, at any rate, I may claim to have directed your attention to them.

ORIGINAL ARTICLES.

ON DIABETES.[1]

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Diabetes has always been regarded as an incurable disease, and although it has elicited much study, there are still many points open for investigation. The nature of the affection may be stated in very precise terms. It is simply a faulty assimilation or a faulty disposal of certain elements of our food. If we look to the food of man, we find that the chief elements of it are nitrogenous matter, fatty matter, and carbohydrates; that is to say, the large group consisting of starch, cane sugar, grape sugar, dextrine, etc., behave in the system the one exactly the same as the other, so that it would be better to employ this general term.

In diabetes there is no difference in the behavior of the carbohydrates: starch behaves the same as cane sugar, the same as dextrine. It is this group of principles in connection with which there is a faulty disposal or a faulty assimilative action. The disease consists essentially of that. A healthy person, for example, takes one or another of the carbohydrates, and it is lost sight of in the system; we know nothing more with regard to it, and we assume that the processes of life are such as to lead to the transformation of this carbohydrate in such a manner that it shall be susceptible of utilization in the system. That is the case with the carbohydrates. That is the condition of health; but what is the condition of diabetes? In diabetes, one of these carbohydrates may be taken, and in proportion as the carbohydrate is taken, so is sugar eliminated in the urine. We may therefore say, and it is merely the expression of a fact, that in the diabetic there is a want of assimilative power, there is a want of the power to dispose of what carbohydrates may be taken into the system as food. Thus far, I think, we have to deal with facts.

In diabetes the sugar reaches the general circulation in a manner that it should not do. In a state of health analysis shows that only a trace of sugar exists in the contents of the general circulation—in the small proportion of 0 6, 0.7, 0.8 per thousand, so that when a carbohydrate is taken as food, it is stopped before it reaches the general circulation. Not so with diabetes. Here sugar exists to a large extent in the general circulation. In proportion to the severity of the case will be the quantity of sugar contained in the general circulation. The carbohydrate which is taken as food does not stop before reaching the general circulation, but in proportion as it is taken, so does sugar appear in the urine. The sugar appears in the urine in proportion as it exists in the blood, and, therefore, the urine may be said to be the index of the diabetes.

The amount of sugar in the urine stands in direct relation to the amount of sugar in the blood. You cannot possibly keep sugar in the circulation; it will not remain there, but it will make its appearance in the renal secretion. Now I have at present only given expression to facts that may be observed.

But why does sugar thus get into the general circulation in diabetes? That is the important point. I think it is generally admitted that the liver constitutes the assimilative organ for the carbohydrates. The liver it is that stops the sugar, or the carbohydrate in its passage to the general circulation. The sugar is so changed by the liver that it is not permitted to arrive in the general circulation. Sugar in the organism is transformed into glycogen, and leads on to the production of fat. Its office may be demonstrated in the lower animals. If you want to fatten an animal quickly, feed it on an abundance of sugar. This, I think, demonstrates the use of sugar in the production of fat. The liver, then, I think, is a steatogenic organ, transforming the sugar into glycogen, and afterward into fat.

It seems to me in health that this is what occurs; that the carbohydrate absorbed from the intestine is stopped by the liver, converted into glycogen and then into fat, instead of being passed through the organ and appearing in the general circulation. If, however, it passes through the organ, we have diabetes. But, what is at the bottom of this faulty process? It seems to be a wrong condition, apparently arising from a faulty condition of the venous blood. The liver is differently placed from other organs, in its large supply of venous blood and its proportionately small supply of arterial blood; and the blood which reaches it should be in a good venous condition. If it be not in a good venous condition, we have the chemistry of the liver immediately altered, and sugar appears in the urine.

This alteration of the portal blood may be produced in a number of ways, it may be produced by disease or by experiment; in the first place, by the injection of defibrinized arterial blood into the portal circulation. In a very short time after arterial blood from which the fibrin has been removed has been introduced into a vein of the portal system, we find sugar in the urine. The blood may be rendered saccharine by over-oxidizing the systemic blood. Experiments—not only my own, but those of others—have demonstrated this, that the carrying on of respiration in the lower animals more actively than normal, the heart's action continuing, will lead to the production of

[1] A communication to the Section of General Medicine, of the International Medical Congress. Stenographically reported for The Medical News, and revised by the author.

saccharine urine. If oxygen exist in the portal blood to an extent to which it ought not to exist, you will have saccharine urine.

How does this apply to diabetes? If you get a vaso-motor paralysis of the arteries of the body you will have that condition. If, as may be witnessed, we have a vaso-motor paralysis of the vessels of one side of the head and neck, we find that the veins of the region become distended, not with venous blood, but with semi-arterial blood. As a result of such, the blood will arrive at the liver without being fully de-arterialized; in other words, in an imperfectly venous condition. If the arteries of the abdominal organs, of the chylopoietic viscera become enlarged so that the blood in them does not become perfectly de-arterialized, you will find the chemical action of the liver becoming changed so as to permit the carbohydrates to pass through it and get into the system, and so charge the general circulation with sugar. The worst forms of diabetes I have met with are those in which there is a dilated condition of the vessels of the mouth. For the production of diabetes, it is only necessary, I consider, for us to have a dilated condition of the vessels of the chylopoietic viscera. But the worst cases of the disease, as I have just said, are those in which this dilated condition of the vessels, due to vaso-motor paralysis, has extended from the chylopoietic viscera and visibly involved the mouth. In these cases we have the presence of an exceedingly red tongue.

Again, puncture of the floor of the fourth ventricle, that celebrated experiment of Bernard, leads to the presence of sugar in the urine. Now what did Bernard himself observe in connection with the animals thus experimented upon? A dilated condition of the vessels of the chylopoietic viscera.

One of the first points to attend to in a case of diabetes is to test for sugar. Sometimes discordant opinions are expressed with reference to cases; one physician, for instance, will say that the patient is suffering from diabetes, while another physician will say that he is not suffering from the disease. Sometimes that depends upon the test made, at other times it depends upon its being a mild case of the disease, which presents varying conditions under the influence of food. If the patient has partaken freely of carbohydrates, sugar exists in his urine, and, if examined then, it is to be detected. Then he goes to another physician after he has not partaken so largely of the carbohydrates, or perhaps after a fast, and there is no sugar present.

We want a test that will give us a decided and reliable indication. I believe that the most reliable test for sugar in the urine is the copper test. What is ordinarily used is known as Fehling's solution. But there is this objection to Fehling's solution, namely, that it is apt to get bad after being kept, because, if kept for a long time it will throw down a precipitate; and again, the stopper of the bottle, unless used often, is apt to become fixed, and when you want to use it you cannot get it out. Some time ago I came to the conclusion that it would be well if we could get the Fehling's reagents prepared ready for use in a solid form. I found, however, that when thus prepared the agents rapidly deliquesced and decomposed. Here, however, is a pellet which I have had prepared in which the difficulty has been overcome. It is composed of the copper sulphate, Rochelle salt, and caustic potash. It must be made in a certain way with the materials in an anhydrous state. The sulphate of copper is to be placed in the die first, then some Rochelle salt, next the potash, and finally some more Rochelle salt to complete the mass. If now we dissolve one of these pellets in a little water, we have first produced the greenish color of the copper, but, later, as the potash is reached, it becomes blue, as is characteristic of Fehling's solution. If these pellets are kept in well-stoppered bottles they will keep for any length of time. And there is this advantage about the pellet, that if it does become bad from the absorption of moisture, it becomes so bad that it cannot be used, and therefore there is no danger of its leading to error. It will, if exposed to the atmosphere, become altered, but it then turns black, so that the change is readily recognized, and it cannot be used. If I now add to this solution a little liquid containing sugar, and boil the mixture, the oxide of copper becomes reduced to the state of suboxide, just as in the ordinary testing with Fehling's solution. These pellets are now considerably used in England.

I do not think that a case of diabetes can be satisfactorily managed unless a quantitative analysis of the urine is made, and the amount of sugar contained in it is determined. I do not consider that a person can get along satisfactorily without knowing the amount of sugar that is being eliminated by the kidneys any more than he can get along in a case of thoracic disease without knowing, by the aid of the stethoscope, exactly the amount of disease existing there. In my own practice, I desire that two specimens be brought to me; one passed in the evening and the other upon rising in the morning. By an examination of this kind you can discover errors of diet in your patient that would otherwise escape you. You do not need to ask the patient at all what he has been eating; you can can tell him. Errors of diet can be detected at once. You can not only detect that the patient is not following your instructions, but you can tell at what meal the error has been committed. Under ordinary circumstances, if the person is passing sugar (of course, if he is not passing sugar you cannot tell anything about it) you may find in the night urine a considerable quantity of sugar, and in the morning urine none at all. The sugar in the night urine has been derived from the carbohydrates taken during the day. The morning urine has been derived from the blood during the night, and therefore in the interval of digestion, and thus may contain no sugar. The urine of food may be quite different from the urine of fasting.

I remember once a patient whom I had treated for some time, coming to me with a bottle of night urine containing an unexpectedly large amount of sugar. I could not account for this sudden increase of the amount of sugar in it. I got him to enumerate the articles of food he had taken the evening before. Among the articles enumerated

he named blanc mange, but he had frequently taken that before without injury. I told him to inquire, and that in all probability he would find that it had not been made in the usual manner; and upon doing so, he learned that it had been made with corn flour (corn-starch) instead of in the manner that had formerly been done, viz., with isinglass and cream. In another instance I was able to tell a patient that she had taken her breakfast in bed. I found in this case that the night urine contained no sugar, while the morning urine was loaded with it. She had arisen late, and the only way of accounting for these conditions observed was on the supposition that she had eaten before arising, and this I found was actually the case.

Now we want some means of easily and precisely determining the amount of sugar contained in the urine. This can be done as follows: As we know and have just seen, in testing in the ordinary manner with the copper solution, the suboxide of copper is precipitated. In the method that I shall show you, instead of this, the solution remains clear, and becomes colorless, and the sugar is estimated from the amount of liquid being examined, that is required to decolorize a given quantity of the solution. The solution is made with the sulphate of copper, Rochelle salt, caustic potash, and water of ammonia. Into a given quantity of this the liquid containing sugar is dropped. It is best in testing urine to dilute it with twenty or thirty parts of water in order to make the test more delicate. The diluted urine is placed in a graduated burette, from which it is dropped into the ammoniated copper solution after the latter has been heated to the boiling point, letting it flow drop by drop until the color has just entirely disappeared. The dropping of the liquid into the test solution is guided by means of a screw adjustment affixed to the tube, which can be set so as to permit the escape of forty, fifty, eighty, or one hundred drops per minute. The beauty of the test is that the exact terminal point of the reduction can with the greatest surety be determined, for there is no precipitate to obscure the view of the reduction. You observe now in the apparatus before me that as the saccharine liquid drops into the boiling test solution the color is gradually disappearing and the liquid remains perfectly clear.

Sometimes albumen is found in addition to sugar in the urine of the diabetic. Not infrequently you will find that when the patient first comes under your observation he has a considerable quantity of albumen in his urine, and that after he has been under treatment for the disease for a while the albumen disappears. This will permit me to bring to your notice a convenient test for albumen. This consists of citric acid and the ferrocyanide of sodium, the ferrocyanide of sodium being used because it makes a looser pellet than the ferrocyanide of potassium, and therefore more quickly dissolves. There is this advantage about it, that as a clinical test you require nothing more. If albumen is present, you are sure to get a precipitate; and if you get a precipitate, you are sure that albumen is present. It is also a test of an exceedingly delicate nature. It is a test that requires nothing to check and nothing to corroborate. You can carry it with you in your pocket like a pencil-case or pocket-knife. No matter whether I need it or not, I always have my albumen test in my pocket with me. I have here, as you see, a very compact tube containing all that is required. I will show you the method of using the test with this liquid, which contains albumen. The citric acid pellet must be used first. It very speedily dissolves. Sometimes citric acid will bring down a precipitate of uric acid, or it may be of oleo-resinous matter; but, as it is not the citric acid which is the test, we do not rely upon that. If the citric acid brings down a precipitate of uric acid, a dilution of the urine will redissolve it. On the addition now of the other pellet, consisting of ferrocyanide of sodium, you have a definite and reliable precipitate of albumen produced. This test has now been out several years, and, so far as is known up to the present time, nothing under the circumstances will occasion a precipitate with the pellet of ferrocyanide of sodium besides albumen, so that it is a test upon which you may rely alone.

I will speak now of considerations bearing more particularly upon the disease itself. There are different grades of intensity probably as marked in diabetes as in any disease we have to deal with. Let us start with a healthy person. Even a healthy person has not an unlimited power of assimilating the carbohydrates, but the first step toward disease is where the assimilative power is below the normal. This kind of person will not, under ordinary circumstances, pass sugar in his urine. If, however, he partake freely of preserves, or other articles of food containing large quantities of sugar, he will pass saccharine urine. Then you come to persons who, when partaking moderately of food containing carbohydrates, will pass sugar. They may take carbohydrates to a certain extent without showing evidence of abnormality, but as soon as the limit is passed, sugar will appear.

Age influences largely this complaint. Severe cases are in young subjects, mild cases are in old subjects, and the more advanced the age, the better the prognosis. I know of no disease in young subjects that is more grave. The ordinary length of life in young subjects afflicted with diabetes may be said to be about two years. In middle-aged or elderly persons the prospects, happily, are of a different nature. If they follow proper management they can keep the disease under. The unsatisfactory cases are in the young, the satisfactory cases in the elderly.

The age at which the disease is most common ranges between forty and sixty years. Preparatory to the meeting of the British Medical Association a few years ago, I went through my case book and tabulated 1360 cases, and I found that the cases occurring between forty and sixty years of age made up fifty-six per cent. of the whole.

Sometimes the disease commences in mild form, and may run along for several years before it is recognized. You may say, What authority have you for making such an assertion? How do you know that the disease has run for some time without having been recognized? There is this way of knowing it: saccharine urine leaves white spots on articles of

clothing, and in micturition the trousers are apt to get splashed. The "boots" at hotels are able to recognize diabetic guests. They find the spots on the legs of their trousers very difficult to brush out. I have had patients come to me who were able, when asked, to hunt up old trousers on which these spots were found, and could remember the annoyance occasioned by them for a long time before. Such are the grounds for being able to say that the disease may have existed for some time without having been recognized.

It runs in families to a considerable degree. I do not say that it is hereditary in the same way as gout and phthisis are; but it runs in some families in a striking manner. I was asked to see a patient suffering from diabetes, who belonged to a family of five, the eldest of whom was not more than eighteen or nineteen. The mother had died of diabetes and the grandmother had died also of the disease. One of the children was brought to me, as I have said, and sugar existed in the urine. I desired to have a specimen from each of the remaining children. In four of the five the urine was saccharine.

There is one point with reference to the disease to which I would like to call your especial attention, and ask you to give it the benefit of your own observation. It is only somewhat recently that my own attention has been fixed upon the matter, and the number of cases I find to be affected in the manner I am going to mention is striking. The remark does not apply to young subjects, but to persons beyond the middle period of life. I used to come across persons who complained of pain in the legs, put down as cases of gout or rheumatism; and I took it as simply coincidental to the diabetes, without anything important in it. But I so frequently met with it that my attention became aroused, and now I find many subjects of diabetes beyond the middle period of life thus affected. There is also more or less ataxia. It is not exactly the pure form of ataxia that is seen in locomotor ataxia, because I have noticed that these persons can stand, maintaining their balance fairly well with their eyes shut. Yet they walk with some difficulty. They cannot properly maintain their balance. They feel often compelled in walking to pull themselves together and make an effort to walk steadier, lest persons behind them may think they have been taking too much. This is what has occurred to me over and over again to hear.

Then, again, with this, there are usually associated some anæsthesia, and hyperæsthesia, and various forms of paræsthesia. Persons feel as though they were walking on pebbles. The flesh is tender, so that when the leg is grasped it gives pain. This comes oftener in the legs than in the upper extremity; sometimes, however, it affects the upper also. Then there is an aching of the bones. The patient complains of it especially at night, in bed. The condition appears to be due to peripheral neuritis.

Treatment.—In young subjects, all we can do is to endeavor to stay the disease for a time. You cannot possibly cure it. At an early stage of the disease in the young subject, you diet the patient—the sugar is removed, and the patient thinks he is cured. Sometimes you are called upon to treat a patient who has been brought to an extreme state of emaciation and weakness, by a sudden and severe invasion of the disease. Placed under proper treatment, the change appears like a resuscitation. He goes on getting better, his hopes are raised, and he thinks he is well. But unfortunately this is not the case. It is a progressive disease. It is a disease which seems to progress in the same way as progressive muscular atrophy or locomotor ataxia, but its advance is uneven. As it advances, the diet and other methods of treatment which succeeded in removing the sugar at first no longer do so; the patient now loses ground and becomes weaker and weaker. You are able at first to keep down the symptoms and the excessive flow of urine; but soon you lose your power to keep them down, and finally something occurs to throw your patient off his balance, and to lead up to diabetic coma, which is the ordinary mode of death in these cases.

It would be a hard and oppressive life to devote one's self only to the treatment of diabetes occurring in young subjects. But the successes obtained in treating the disease in patients of a more advanced age compensate in a measure at least for the failure in young persons.

We must first avoid feeding the disease, and whilst doing this endeavor to convert the wrong action of assimilation into a right one. I lay the greatest stress on diet. I do not think that we can get along in the management of these cases without strict attention to diet. There must, then, be the proper articles of food provided. It is easy enough for the patient to avoid taking some articles of food, as sweets, pastry, puddings, potatoes, etc., but it is not so easy in the case of bread. What he may take may be summed up as consisting of any kind of meat, fish, poultry and game, with eggs, butter, cheese, the various forms of green vegetable food, and a prepared substitute for bread. Milk should only be taken to a limited extent. Some authorities have recommended the free use of milk. But milk contains sugar and milk-sugar behaves in the system exactly as any other form of sugar. I have found that where milk has been taken in large quantity, the sugar has been kept up in the urine; whilst when the quantity of milk was reduced, the state of the urine improved. Certainly it is a hardship for a patient to abstain from bread, and you want to make it as easy as possible for him, by substituting something else of a palatable nature for the article prepared from wheaten flour. I do not think bran, which is often used, is a good substitute, because it contains from 40 to 50 per cent. of carbohydrates and very little else that can be digested and applied. Gluten is better, but it contains a considerable amount of starch. If the gluten is good, it contains only from 30 to 33 per cent.; but I have found some specimens containing 70 to 80 per cent. Perhaps there is no article of food better suited to the diabetic than the almond. There is nothing which seems to supply him better with what is wanted. The almond, rich as it is in nitrogenous material, rich as it is in oily material, is just the article of food to meet his requirements, and palatable products, as a substitute for bread, may be prepared from it.

Medicinal Treatment.—As far as my experience goes, nothing contributes so much to arrest the disease as opium, morphia, and codeia. It is difficult, of course, to say, when you are treating a case with one of these remedies in conjunction with diet, whether the good result you get is not solely the result of dieting. But my own experience is to the effect that my practice, ever since I have been giving these, has been much more satisfactory than it was before I gave them. Clearly these agents appear to exert some power in controlling the disease. It is my custom when I get a patient of forty-five to fifty years of age to put him at once on small doses of opium, morphia, or codeia, and gradually increase. The sugar in the urine diminishes and usually disappears. After a while I permit the patient to take a little bread—say, two ounces a day. If he takes this without a return of sugar I let him gradually increase the quantity until he takes four or six ounces per day. Then I say to him you had better let well alone and stop at this, knowing how readily harm may be done by going beyond what can be taken without occasioning the passage of sugar. As long as sugar does not exist in the urine there is nothing to interfere with a healthy state being maintained. The patient is, to all intents and purposes, in a natural condition as regards his general state. It is only with the voidance of sugar that we get the symptoms of the disease and untoward results.

PRIMARY EPITHELIOMA OF THE ANTERIOR VAGINAL WALL, AND SUPERINVOLUTION OF THE UTERUS.

BY MILES F. PORTER, M.A., M.D.,

PROFESSOR OF GENITO-URINARY SURGERY AND SURGICAL ANATOMY IN THE FORT WAYNE COLLEGE OF MEDICINE.

I VISITED Mrs. P., in company with Dr. J. E. Stultz, whose patient she was, on April 16, 1887, when the following history was obtained: age fifty-eight years, born in England, mother of four children, family history unimportant, menstruated first at seventeen years, menopause at forty years. When fifty years of age, she felt as though a foreign body were in the vagina; and when her bowels moved, or when she urinated, she noticed that some blood "passed," which she supposed to be caused by "piles." This condition continued for some time, finally stopped for some months, when about December 25, 1886, while bathing, she noticed a growth on the external genitals.

Shortly after this, a profuse hemorrhage came on suddenly. These hemorrhages recurred at irregular intervals, until within the past two weeks, since which time no blood has been lost.

No bladder symptoms at any time, except for the past four or six weeks she has had to wait on the vessel a longer time than usual, before the flow would start, though the stream was always full size, and lately, to use the patient's language, "the water scattered."

About the time of the first severe hemorrhage pain commenced, and has been severe ever since. The patient was much emaciated, cachectic, pulse rapid and feeble, temperature 102° Fahr., no appetite, and on lifting the clothing for the purpose of making a digital examination, a fearful odor was perceived.

Digital examination convinced me that we had to deal with an epithelioma, which involved the anterior vaginal wall, and also the anterior part of the external genitals; that the upper extremity of the vagina was not involved; that there was no involvement of the pelvic or other glands; that the proper course to pursue, in view of the pain produced by the examination and the patient's history and condition, was to etherize her, make a more thorough examination, and if no contraindications were developed, to remove the growth as thoroughly as possible, with a view of stopping the fever, which was evidently septic in character, ameliorating the pain, preventing hemorrhage, and thereby prolonging life.

I was unable to discover any trace of the uterus by this first examination, but was able to define distinctly with the finger a depression or opening at the vault of the vagina, which would almost admit the tip of the finger.

The patient was etherized, and the growth removed with the scissors, knife, and curette, after a thorough examination had been made, which confirmed the conclusions drawn from the first, and revealed the further fact that the disease involved the peri-urethral tissues from the meatus to the neck of the bladder, though the urethra proper was not involved. The labia minora, anterior one-half of the mucous surface of the labia majora, clitoris, and anterior half of the vaginal wall for a distance of two inches from the vulva, were completely removed, while the urethra was dissected from the surrounding tissues up to the neck of the bladder, about one-half inch of the distal extremity cut off, and the extremity of the remaining portion brought down and fixed with silk sutures.

Careful examination by Drs. Myers, McCullough, and myself, both before and after the operation, failed to elicit any traces of a uterus, except the depression at the vault of the vagina noted above.

No probe was used, for fear of entering the abdominal cavity. As far as touch and sight could reveal, the growth was completely removed. The woman recovered slowly from the ether and the shock, and for three days was unable to control her water, after which time she had perfect control over it, and passed it without any difficulty whatever. Since the operation she has been free from pain, has had no fever since the fourth day, her appetite is good, and at present writing (May 14th), there has been no return of the growth, though I do not anticipate a permanent cure by any means. Strict antisepsis was observed in the operation, and in so far as possible, in the after-treatment. Hemorrhage was controlled by forceps, no ligatures being required.

The case is important, chiefly because of the rarity of primary epithelioma of the anterior vaginal wall, and because of the extreme degree of atrophy of the uterus. I can find in the literature at hand no record of a case which approaches this one in this respect.

How much of this atrophy is due to the process, called by Simpson super involution, how much to senile changes, and how much, if any, to the disease present in the vagina, are interesting questions which I will leave for others to discuss. Inasmuch as the meatus urinarius was involved in the disease, it is also rather singular, considering the duration of the malady, that the trouble had not travelled along the urethral mucous membrane to the bladder. I should have added, while speaking of the results of the operation, that there is at present but little discharge, and what there is, is free from any unpleasant odor.

A microscopical examination made by Dr. H. McCullough proved the diagnosis, as to the nature of the growth, to be correct.

106 Fairfield Avenue.

MEDICAL PROGRESS.

Antipyrin in Pregnancy.—Cheron reports the case of a young woman seven months advanced in pregnancy, who was attacked by typhoid fever. Antipyrin was given to reduce a temperature of 108° F. in two doses of seven and a half grains each, at intervals of five hours. The temperature fell rapidly to 94.1° F., attended by cramps, difficulty of speech, obscured sight, and general intellectual oppression. Heat and diffusible stimulants were required to rescue the patient from this condition. The remedy was again tried in six grains given in eight doses, at intervals of three hours; the collapse repeated itself. Still smaller doses were without either good or bad effects.—*Journal de Médecine*, July 31, 1887.

Iodoform Wicking.—Gersung, of Vienna, has found wicking impregnated with iodoform an excellent material for tampons in the drainage of wounds whose secretion is moderate; in Billroth's clinic wicking saturated with tannin and iodoform is used with excellent results. Its removal is much less painful and inconvenient than that of gauze.—*Centralblatt für Chirurgie*, July 30, 1887.

A New Peptone for Hypodermatic Injection.—Raynaud gives the following formula for a peptone made from blood, especially adapted for intravenous, or hypodermatic injection:

Pure blood albumen	gr. 75.
Dialyzed pepsine	gr. 12.
Distilled water	℥ 2ij.
Hydrochloric acid	gtt. ij.

The whole should be digested seventy two hours at a temperature of 110° F.—*Bulletin Général de Therapeutique*, July 30, 1887.

The Pupil as a Guide in Giving Chloroform.—Neilson considers the condition of the pupil a reliable indication of a patient's condition under chloroform anæsthesia, and concludes from his experiments as follows:

1. The effect produced by chloroform on the pupil is at first dilatation, varying in degree and duration, then contraction as the narcosis becomes profound, and dilatation again when the sensibility is returning. If the administration be still continued, with the pupil strongly contracted and motionless, the pupil will also dilate, but in this case more suddenly and completely, and will be coincident with a state from which it will be difficult or impossible to resuscitate the patient. This latter is the dilatation of asphyxia.

2. So long as the pupil dilates in response to excitation by pinching, etc., the patient is not sufficiently narcotized for the operation to be proceeded with, unless the latter is slight and does not require complete anæsthesia.

3. When the pupil becomes strongly contracted and immobile, no more chloroform should be given until it begins to dilate again. If, then, further anæsthesia be required, a little more chloroform should be given till the pupil again contracts.

4. The occurrence of sickness causes dilatation similar to, but more sudden than, that which happens when sensibility is returning, and the efforts of vomiting have the effect of arousing the patient.—*British Medical Journal*, July 30, 1887.

Neisser's Calomel Injections for Syphilis.—Harttung reports good results in ninety cases of syphilis from hypodermatic injections of calomel and olive oil, 1 to 10. Few abscesses, and trifling reaction followed.—*Centralblatt für klinische Medicin*, July 30, 1887.

Thymol as a Tænifuge.—Dr. Numa Campi has used this remedy successfully in ankylostoma duodenalis, which so frequently produces anæmia, especially among the miners of Italy. It is given as follows: The evening before its administration, after the last meal, ℥ss of castor oil is taken. The following morning, ℈2 of thymol are divided in twelve doses, at intervals of a quarter of an hour, followed by a second dose of oil. Should symptoms of depression arise from the thymol, a stimulant may be combined with it. Its action was always successful.—*L'Union Médicale*, July 14, 1887.

The Results of 1881 Cases of Diphtheria and 1000 Tracheotomies.—Guth, in an extensive collection of statistics, shows that from prior to 1882 the performance of tracheotomy in these cases has fallen from 71.3 per cent. and 68.6 per cent. to 49.5 per cent. at the Lazarus Hospital, in Berlin. Of those tracheotomized prior to 1882 from 65 per cent. to 83 5 per cent. died; since 1882 from 76 per cent. to 58 per cent. have died. The lessened rate of tracheotomy is owing to a milder epidemic; the improved results of tracheotomy are due to the adoption of Langenbuch's procedure; the insertion of a cotton-iodoform tampon, to which a ligature is attached, through the tracheal wound as far as the larynx.—*Centralblatt für Chirurgie*, July 30, 1887.

The Action of Eucalyptol on the Tubercle Bacilli.—Chabannes and Perret have made experiments with a five per cent. solution of eucalyptol to test its action upon tubercle bacilli. Sputum from the tuberculous was treated with the solution, and animals were then inoculated with it. Their experiments showed that eucalyptol has no effect upon tubercle bacilli; the animals died after inoculation with virulent tuberculosis.—*Centralblatt für Bacteriologie und Parasitenkunde*, Band ii. No. 5.

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SATURDAY, SEPTEMBER 24, 1887.

SOME NEW OPERATIONS UPON THE INTESTINAL TRACT.

ONE of the most noteworthy incidents of the International Medical Congress was the reading of a paper by DR. SENN, of Milwaukee, entitled "An Experimental Contribution to Intestinal Surgery, with Special Reference to the Treatment of Intestinal Obstruction." The address was so voluminous, and dealt with so many different topics, that it is difficult to comprehend it in its entirety until we shall have an opportunity of studying it in print.

As the title implies, the work was entirely experimental in character, and while much is to be learned by comparative methods, still we cannot rely implicitly upon information gained in this manner, as the dog seems to be much more tolerant of intestinal mutilation than is man. It seems to us, however, that this work of Dr. Senn is of the very highest importance, and it reflects great credit upon him. It is not possible for us to do more than to notice a few of the problems which are sought to be elucidated.

It is well known that several operators have removed large portions of the small intestine without causing any special disturbance of the digestive functions; thus Kocher excised $5\frac{1}{2}$ feet, and Koeberlé $6\frac{1}{2}$ feet of bowel, the patients surviving and not experiencing any bad effects from the mutilation. One of the questions which Dr. Senn has sought to settle is, How much of the intestinal tract can be excised safely? He found that when more than six feet of the small intestine was resected the dog invariably perished from the immediate effects of the trauma, and that not more than four feet of bowel could be removed without causing such disturbances of digestion and nutrition that the animal soon succumbed. One dog upon which resection of a large portion of the small intestine was practised, lived some months, eating incessantly, consuming enough to feed ten dogs, and emaciating progressively until he died of inanition. Curiously the same impairment of nutrition does not follow the physiological exclusion of an equal length of bowel from the intestinal tract, as follows resection, and fecal accumulation does not occur in the excluded portion. The practical lesson to be deduced from these observations is that better results will follow the formation of an artificial communication between contiguous portions of bowel, in cases in which the obstruction may be allowed to remain, as a cicatricial stricture, for example, than will follow the performance of circular resection.

As every one who has had experience in intestinal surgery knows, time is a most important element. Many patients succumb to shock on account of the length of time required for the performance of intra-abdominal operations, who would survive if the duration of the exposure could be materially shortened. Not only does the long operation expose the patient to increased danger from the anæsthetic, from the chilling of the peritoneum, and from the extensive manipulation required, but the longer the exposure to the atmosphere, the greater the danger from sepsis; hence every effort to shorten the duration of these procedures is a move in the right direction. Owing to the length of time required for the proper execution of the Czerny-Lembert suture in cases of circular enterectomy, Dr. Senn has devised a modification of Jobert's invagination suture; the bowel having been cut squarely across: the intussusceptum is lined with a narrow, flexible rubber ring, and this being introduced into the intussuscipiens, the peritoneal surfaces of the latter are inverted by means of two catgut sutures, until they are in contact with the peritoneal surface of the intussusceptum, and firm union is effected in a few hours. In order to prevent any danger from perforation of the bowel, a graft, two inches in width, taken from a non-vascular portion of the omentum, is laid over the entire line of suture; this graft forms adhesions in twelve hours, and becomes vascularized in twenty-four hours. We believe this idea to be entirely original with the author, and is rational in its aim, and promises to be a great advantage in these cases. Perforation peritonitis has been the cause of death in a number of cases of pylorectomy, and other intestinal resections, and it is for the purpose of preventing this that the omental graft is recommended.

One of the most interesting portions of the address was in regard to the formation of intestinal anasto-

moses. This idea originated with Dr. Woelfler, of Vienna, who sought to overcome the effects of a carcinomatous stenosis of the pylorus, by forming a fistula between the stomach and small intestine; this operation, now known as gastro-enterostomy, has been performed thirty or more times with most satisfactory results in some cases, but the great length of time required for its performance is a very great disadvantage. Lücke, who has had the best results with gastro-enterostomy, consumes from one and a half to two and a half hours in its performance. Senn, in speaking of this operation, said it was a procedure which an expert might perform in an hour, but that by means of the method devised by himself a novice could do it in ten minutes. Starting with the idea that it is only necessary to bring broad surfaces of peritoneum together in order to have union occur, and that this union occurs quicker when the tissues are irritated by scratching with an aseptic needle, he effects apposition by means of two partially decalcified bone plates with a lumen corresponding to that of the fistula which is to be formed, and these are secured with four silk sutures. An incision is made into the stomach, and a bone plate slipped in, and each of the four sutures is passed directly through the stomach walls with needles. A similar opening is made into the intestine, a plate slipped in, and the threaded needles passed through its walls. The corresponding sutures are tied, and the stomach and bowel are brought into accurate contact. The plates eventually become absorbed, and the threads are discharged, leaving a permanent fistula. The same principle can be applied to the formation of an "intestinal anastomosis" in any portion of the tract, and this recommendation is a distinct advance in the treatment of many of the surgical affections of the intestine.

This operation is recommended in all cases in which it is either impossible or unadvisable to remove the obstruction, provided the cause of the stenosis is not *per se* a source of danger. In some cases a lateral implantation of the small intestine into the large intestine is recommended, which is performed as follows: a slit is made in the colon, and the cut end of the small intestine, which has been lined with the rubber ring previously mentioned, is slipped into the slit and secured with a few sutures; thus we may have an ileo-colostomy or ileo-rectostomy, and this method is applicable to all parts where the resected portions do not correspond in calibre. As has been stated, these procedures have only been practised upon animals, but if it shall be found that they are equally as successful upon man, a revolution in the treatment of intestinal lesions is bound to follow. Let us hope that this desirable result will be effected.

YELLOW FEVER VACCINATIONS.

The profession will await with great interest the report of Dr. Sternberg, the Government expert, recently sent to Brazil to study the methods of vaccination against yellow fever introduced by Dr. Freire, whose most recent communication we presented to our readers in last week's issue. It is satisfactory to note, in the first place, that he has been able to demonstrate the microbe to so reliable an authority as Professor Cornil, of Paris; for there have been serious, and not unnatural doubts, whether he was dealing with any definite microörganism. Certainly the figures of the plates of his large work, published in 1885, were in themselves sufficient to discredit the entire research, and we are not surprised at Cornil's reproach, to which he alludes. There were indications, then, of an untrained, unscientific mind, and the confusion expressed in the present paper between *cryptococcus* and *micrococcus* is astonishing in any one professing to be a skilled bacteriologist. It is claimed that the organism is a chromogenic micrococcus (?), producing two different pigments, one yellow and the other black, the former staining the tissues, the latter appearing in the vomit. The description which he gives of it, is exceedingly indefinite, and in no particular will Dr. Sternberg's work be more welcome than in a clear and accurate definition of the structure and relations of this organism.

The vaccine is prepared by first passing the virus through six or seven guinea pigs, and then cultivating in beef-broth or gelatine. At the tenth or twelfth generation from the primitive microbe the virus is found to be sufficiently attenuated for purposes of vaccination. The practical results of the investigations are of extreme interest, and the figures which he gives of the vaccinations during the years 1885 and 1886, impress us much more than any other part of his work. A mortality of only 8 in 6524 vaccinations, means that either insusceptible persons were the subjects, or else that we have here in reality a mitigated virus capable of protecting against this terrible scourge; and let us hope that Sternberg's researches may confirm this latter view.

FLANNEL VERSUS RUBBER BANDAGES.

There are contingencies constantly arising in which it becomes necessary to apply a bandage, and it depends much upon the skill with which it is applied, as to whether beneficial, negative, or positively bad results are to follow. A properly applied bandage gives comfort, and in numerous instances exerts a positively curative effect, and this effect may be materially influenced by the fabric out of which the bandage is made. It is not a matter of indifference as to the material used for the bandage. In many instances muslin torn into narrow strips is used for

all purposes; but it is as rational to use one drug exclusively in the treatment of any given disease as to use the same material in every case in which it is desirable to apply a bandage.

For the retention of wound-dressings, thin materials, as gauze, or cheese-cloth, are much preferable to muslin, as they can be applied better, and do not slip so easily; whilst for the retention of splints, in the treatment of fractures, there is a tendency to replace bandages with adhesive plaster, which holds more firmly, and has the advantage of leaving the seat of injury open to inspection. When firm compression is desired, as in the treatment of ulcers of the lower limbs, muslin is generally used; but of late years it has become fashionable to use Martin's pure rubber bandage, especially when there is a varicose condition of the veins; and it must be admitted that, in many instances, admirable results are obtained by its use. It has, however, some very great disadvantages, due to the fact that the secretions of the skin cannot pass through the bandage, and the limb is constantly bathed in perspiration. This is not only unpleasant, but—in hot weather especially—the parts become offensive, and unless great care is exercised, and even when every precaution is taken in some cases, an eczematous condition is produced, which is distressing to the patient and aggravating to the local affection. Aside from these objections, the heat of this bandage is very unpleasant during the summer. For these reasons we prefer a good quality of flannel to any other material for bandaging the limbs.

Flannel absorbs the perspiration, and neither produces nor aggravates an eczematous condition of the skin; it is sufficiently elastic to supply the pressure which may be desired, and the roughness of its surface effectually prevents its slipping. It is the coolest bandage which can be effectively applied, owing to its capacity for absorption, and, in our experience, has answered a better purpose than any other material.

The Volunteer Medical Corps during the recent three-days' Constitutional Centennial Celebration at Philadelphia reported 384 casualties, of various degrees. The list includes a fatal fracture of the skull; a fatal fracture of the ribs and sternum; a fracture of the wrist and ankle; 7 lacerated wounds; 1 uterine hemorrhage; 20 cases of epilepsy; several quotidian agues; numerous cases of syncope and exhaustion from overexertion; and 1 case of acute dementia. In view of the large number of people who were collected on the line of the procession, the relatively small number of accidents speaks well for the character of an American crowd, and is in marked contrast with the 600 casualties reported on the single day of the Queen's Jubilee in London.

Great credit is due to Medical Director Cleborne and his efficient staff for the admirable manner in which the details of the medical service were carried out. The presence of the medical officers with their ambulances, stationed at short intervals along the route, gave a feeling of security to the spectators and added in no small degree to their peace of mind.

The new building of the College of Physicians and Surgeons of New York, will be inaugurated on next Thursday, with an Historical Sketch of the College by Dr. J. C. Dalton, and an Inaugural Address by Joseph H. Choate, Esq.

The subscriptions toward founding the Pasteur Institute at Paris now amount to 1,872,625 francs.

The late French journals announce the death, at Paris, of M. Giraud-Teulon, one of the most eminent of French ophthalmologists.

SOCIETY PROCEEDINGS.

AMERICAN GYNECOLOGICAL SOCIETY.

Twelfth Annual Meeting, held at New York, September 13, 14, and 15, 1887.

(Specially reported for The Medical News.)

Wednesday, September 14th.

Dr. C. D. Palmer, of Cincinnati, read a paper on

THE THERAPEUTIC VALUE OF SOME MEDICINES IN THE TREATMENT OF HEMORRHAGIC CONDITIONS OF THE UTERUS.

Referring to the fact that gynecology has assumed a decidedly surgical tendency, he said that too little attention has been paid to the less brilliant medicinal treatment. Uterine hemorrhage can often be treated advantageously by means of drugs, such as ergot, digitalis, cannabis indica, bromide of potassium, arsenic, and gallic acid. Ergot is especially useful in cases of chronic hyperæmia and subinvolution of the uterus, attended by menorrhagia, where the organ is soft and relaxed, and of interstitial and submucous fibroids. Hemorrhages due to fungous endometritis, ovarian and parametritic inflammation are not favorably affected. Digitalis is useful in uterine hemorrhage due to cardiac disease.

Cannabis indica is an uncertain drug, acting rather upon the nervous system. Bromide of potassium is a sedative in ovarian irritation and congestion and thus is useful in certain forms of menorrhagia, as well as in the treatment of hemorrhage from subacute and chronic pelvic peritonitis.

Arsenic acts by improving the general condition, and hence is of value in the menorrhagia of young women and at the climacteric, also in malarial conditions. He gave Fowler's solution in three minim doses. Active cathartics often exercise a favorable effect in checking uterine hemorrhage, especially if there is evidence of obstruction to the circulation from habitual

constipation. In general, the administration of iron during the intermenstrual period is not advisable, unless the patient is markedly anæmic.

Hydrastis Canadensis has been highly recommended as a hæmostatic in uterine hemorrhage from any cause. Garrigues has obtained good results with *gossypium herbaceum*, especially in cases of fibroid tumor. Hamemelis is inferior to ergot for the relief of sudden hemorrhage, but is useful in the treatment of long-continued flux, where the hemorrhage being of a passive character, the uterus is soft and flabby.

DR. FORDYCE BARKER said that he had found arsenic to be a valuable drug in the treatment of hemorrhages, of excessive flow at the time of the menopause, where vasomotor irritability was especially prominent. It exerts a direct influence upon anæmia of vasomotor origin. He is accustomed in treating such cases to administer full doses of the bromides during the time immediately preceding the flow, giving arsenic during the intermenstrual period.

Hydrastis Canadensis is of most value if given after the flow has begun. If there is marked vasomotor irritability he adds five or six minims of the tincture of nux vomica. Viburnum is a useful drug in menorrhagia and metrorrhagia, where the hemorrhage is of a passive character, especially in early pregnancy, and in threatening abortion; it is a valuable uterine sedative.

He agreed with the author as to the importance of relieving the portal circulation, which was accomplished by the use of mercury and saline laxatives. In cases where the uterus was large and flabby, iron and opium should be administered during the intervals between periods.

DR. LLOYD ROBERTS, of Manchester, said that he did not have much confidence in any drug but ergot in the treatment of passive hemorrhage from the uterus. It is important to use a good preparation. He inferred that the author did not reject local treatment. He had often found that by giving ergot in the intermenstrual period more good was accomplished than when it was administered only during the fever. He thought that quinine was more useful than arsenic in menorrhagia of malarial origin. Gallic acid is the next best remedy to ergot in hemorrhage from mucous membranes. Might not its value be directly due to its local effect? Bromide of potassium is only useful in ovarian congestion, or in conditions where the nervous element is prominent.

DR. BALLS-HEADLEY, of Melbourne, thought that it was important that prominence should be given to the medicinal treatment of pelvic affections. He did not see how the remedies acted *per se*. For instance, in the case of fibroid tumors, the vessels around the exterior of the tumor are so large that it is difficult to see how they can be affected by muscular contraction, since the muscular fibres cross in so many different directions. We must know exactly where the tumor is located, else there may be danger that the tumor will be expressed into the peritoneal cavity, instead of into the cavity of the uterus. He had given ergot for years, and did not have the slightest faith in it. We must consider the natural history of these tumors; some remain stationary for years. He had tried local applications of ergot without result. He had used the tincture of the chloride of iron in half-drachm doses thrice daily with good effects.

DR. GRANT (Bey), of Egypt, reported a case of uterine hemorrhage, in a syphilitic patient, which was cured by mercurial treatment after all other hæmostatics had been tried in vain. The patient had a large fibroid tumor which also disappeared under the administration of mercury.

DR. H. R. C. WILSON, of Baltimore, had little confidence in any uterine hæmostatic. In young girls with irregular and excessive menstruation it is necessary to care for the general health. Obstinate constipation is a common cause of uterine hemorrhage. He depends most on ergot when the uterus is flabby and relaxed.

DR. CHADWICK, of Boston, had found chian turpentine to be especially valuable. In one case, a young lady had been flowing for two years, and had been treated without effect. Under six grain doses of the turpentine, repeated thrice daily, the hemorrhage ceased promptly. He believed that it is better to give ergot between the periods, and aromatic sulphuric acid at the time of the flow.

DR. REID, of Glasgow, said that in flabby, anæmic patients, where no marked local disease could be found, he had given twenty grains of alum daily with good results. He had used gallic acid, but without benefit. The iodide of arsenic had been useful in his hands.

DR. PALMER closed the discussion by saying that he had been surprised at the indiscriminate way in which these remedies had been employed. He had endeavored to lay down a few rules which might serve as a guide in using them.

DR. DOLÉRIS, of Paris, delivered, in French, an address on

ALEXANDER'S OPERATION,

of which the following is a very brief abstract:

He first described the normal supports of the uterus. These are twofold, the tissues forming the pelvic floor, and the uterine ligaments, the former being the principal support. According as these supports are weakened, displacements of the organ may occur, which vary in their degree from simple retroversion to complete procidentia. The minor degrees of prolapse may be cured by restoration of the pelvic floor and vaginal outlet alone; this is also true of cases of prolapse combined with anteversion. For the other displacements shortening of the round ligaments, combined with posterior kolpo-perineorrhaphy, offers an efficient means of restoring the organ to its normal position and retaining it there. He alluded to the results of his experiments on the cadaver, and to the success which had followed his operations on the living subject. From his early position as a sceptic on the subject, he had come to place great confidence in the operation popularized by Alexander.

DR. REID, of Glasgow, said that he had no doubt of the value of the operation in suitable cases, but we should remember that the *position*, not the *condition* of the uterus was altered. Months might pass before much benefit was felt. He thought the external ring should be clearly exposed, then, by pressing on the canal above, the fat and fibres of the cord would be found.

He had never failed to find it in fourteen cases. The after-treatment is very important; the patient must be kept in bed for six weeks, and must wear a pessary for at least six months more.

DR. MARTIN, of Berlin, said that the operation had been done only a few times in Germany, perhaps not more than a dozen. He was pleased to see that M. Doléris had changed his opinion favorably with regard to the operation. He would himself perform it in a suitable case, but he had had a large experience with prolapsus and had found that in most of the cases the patient had no serious symptoms. He did not believe that the round ligaments alone support the uterus, since the pelvic floor is the true support. Hegar was the first to point out that only by restoring this floor could the displaced organ be kept in position; his operation on the posterior wall accomplished this.

DR. LUSK, of New York, said that he had been very slow to accept the operation, but after watching Dr. Polk operate he had been led to perform it several times. It was free from danger, and there was no reason why it should not be employed in the case of workingwomen, where pessaries had been tried in vain. The paper was especially valuable in laying down positive indications for the operation. There was no doubt that in aggravated cases anterior and posterior kolporrhaphy did not keep the uterus in place. He had performed Hegar's operation for several years, but it was not sufficient.

DR. H. MARION SIMS, of New York, said that he had performed Hegar's operation a number of times with good results.

DR. LEE, of New York, had performed Alexander's operation nineteen times, and had found it particularly useful in cases where pessaries could not be borne, by reason of chronic salpingitis, and where the uterus was large and procident. In the latter cases it is absolutely indispensable to perform Emmet's operation on the perineum simultaneously. He highly endorsed the operation in properly selected cases. Hysterorrhaphy is useful where the uterus is adherent, but it is much more serious than Alexander's operation and can never take its place.

DR. LAWRENCE, of Bristol, England, had not performed the operation himself, but had seen a number of cases in which, after the lapse of several months, the patients were little, if any, improved.

DR. KELLY, of Philadelphia, thought it was folly to expect a heavy uterus to be suspended by the round ligaments alone, when the vaginal canal was patent. When there was a large, heavy uterus an operation must be performed first, in order to narrow the vagina. When this has been done, the fundus could be held in position by a slight attachment. The trouble in the Alexander-Adams operation was that, in lifting the heavy, procident uterus, its entire weight was thrown upon the ligaments; the same was true in cases of old retroflexion. He had recently performed hysterorrhaphy successfully, and twelve successful cases had been reported in Germany.

DR. DOLÉRIS, in closing the discussion, repeated that when the uterus was anteverted and procident, the plastic operation on the vagina was sufficient, without shortening of the ligaments.

DR. ALEXANDER J. C. SKENE then delivered the

PRESIDENTIAL ADDRESS.

Just twelve years ago, he said, the American Gynecological Society was organized in the Academy of Medicine, Dr. Fordyce Barker presiding. The idea of founding such a society had been conceived by Dr. Chadwick, of Boston. The results had been highly gratifying, since the organization could now compare with any in the world. It had served to promote not merely an interchange of ideas on scientific subjects, but social intercourse among its Fellows. The fact that men of science were becoming united in one grand family was proved by the fact that there were present at the meeting representatives of nearly all parts of the civilized world, a circumstance which was not possible in the past.

He alluded to the fact that modern gynecology was not much more than seventy-five years old, yet wonderful progress had been made in it, especially in the department of surgery. At least ten of the most heroic operations in surgery were gynecological; over 780 gynecological instruments had been devised, exclusive of the different varieties of needles and sutures. About three hundred different pessaries were in use. During the last three-quarters of a century about six thousand books on diseases of women had been published, and in the past eight years seven thousand five hundred and five journal articles and pamphlets on this subject had appeared.

The new antiseptic method had added remarkably to the successful results of surgical gynecology. Surgery still held too prominent a position, however; but it would eventually find its true position. The time would come when enthusiastic surgeons would stop and consider what was the real value of their work, while greater prominence would be given to the medical treatment of functional and organic diseases.

DR. GEORGE GRANVILLE BANTOCK, of London, then read a paper on

THE TREATMENT OF THE PEDICLE IN SUPRAVAGINAL HYSTERECTOMY.

He said that in his first case of hysterectomy he had divided the pedicle by means of the cautery, according to Baker Brown's method, but, on removing the clamp, the hemorrhage was so profuse that it was necessary to ligate the broad ligaments separately. The stump was then tied in two portions and secured at the lower angle of the abdominal wound, but was left within the peritoneal cavity. The ligatures slipped, oozing into the peritoneal cavity occurred, and the patient died of septicæmia on the fourth day, in spite of the strict observance of antiseptic details. This manner of treating the stump is the very one so strongly commended by Sänger and Schröder, but he had been so impressed with its fallacy that he resolved never to try it again. In the next case he used Cintrat's serre-nœud, but found it inefficient, and was obliged to substitute Koeberlé's for it, which he subsequently changed for the instrument which he now uses. He had found that fine, soft iron wire was preferable to either copper or steel.

Several cases were cited at length, showing the efficiency of the serre-nœud in completely controlling the hemorrhage during the removal of large tumors. In

one instance the reader neglected to apply the supporting pins before excising the fibrous mass, and, although the stump was encircled by the wire of the écraseur, it slipped through the loop and fatal hemorrhage occurred. In one successful case the pregnant uterus was removed together with a fibrocyst weighing thirteen pounds. In his forty-fifth case he applied the serre-nœud just below the level of the ovaries and partially tightened it, then included the broad ligaments in long hæmostatic forceps, thus securing the large vessels. The peritoneal covering of the uterus and tumor was then divided three inches from the wire loop and was reflected toward the latter. After tightening the loop, the pins were inserted an inch from the wire, and a second serre-nœud was applied just behind the pins, after which the first was removed. In this an additional half-inch was gained in the pedicle, and the strain on the broad ligaments was relieved.

In a subsequent case this method was still further modified by first reflecting the peritoneal envelope, while temporarily securing the broad ligaments, and then applying the loop; the ovaries were subsequently ligated separately. Where the broad ligaments were redundant, and were thrown into folds in tightening the loop, it was important not to trim it away until it was secured by several hæmostatic forceps, preparatory to stitching it over the stump, otherwise the divided fold might escape from the loop and give rise to hemorrhage. By uniting the edges of the peritoneum across the stump, this retraction was prevented, when from the shrinking of the tissues the loop became loosened.

The treatment of the stump after supravaginal hysterectomy is a very different thing from that of the ovarian pedicle, yet the two have been regarded as identical. The differences are great. He had no fixed prejudices in the matter, but simply spoke from the results of his own experience, when he said that the intraperitoneal method has been as uniformly disastrous as the extraperitoneal has been successful.

To summarize, the following conditions may be presented:

1. The broad ligaments may be so long and the ovaries so easily raised from the pelvis that the whole can easily be included in the loop.

2. One ovary can be included, while it will be necessary to ligate the other separately.

3. Both ovaries must be ligated separately.

4. The tumor may grow between the folds of either broad ligament, so that it must be partially enucleated.

5. The tumor may be situated so low down in the body of the uterus that it will be necessary to separate it largely from its peritoneal covering before a sufficient pedicle can be formed.

The proper recognition and management of these complications severely test the judgment and coolness of the operator, and can only be learned by experience.

In regard to the after-treatment of the stump, he said that, if it was properly secured at the time of the operation, the less it is interfered with the better. He had sometimes allowed two weeks to elapse before disturbing the dressings. The main object is to keep the stump dry, therefore the dressings should be changed as soon as they become moist. Perchloride of iron should not be applied to the stump, because it is unnecessary and may be injurious. If the wire is properly applied at the time of the operation, it will not be necessary to tighten it again for four or five days, unless there is marked oozing; if the pedicle is small it is not necessary to tighten the loop at all. There is no hurry about getting rid of the stump so long as it remains dry; if pus should begin to ooze from around it after the lapse of a week, it may be treated with iodoform, or the hole may be washed out with a solution of one part of sulphurous acid in nine parts of water, until the sloughing tissue has been removed, the opening being subsequently filled with a mixture consisting of equal parts of glycerine and alcohol, the latter arresting suppuration and promoting healthy granulation.

Appended to the paper was a table showing 45 recoveries out of 57 cases in which the pedicle was treated extraperitoneally, with 4 deaths out of 5 in which it was treated intraperitoneally.

On motion, the discussion of this paper was postponed until the following day.

AFTERNOON SESSION.

DR. JAMES B. HUNTER, of New York, reported

A CASE OF ACUTE DILATATION OF THE STOMACH FOLLOWING LAPAROTOMY.

The operation consisted in the removal of both tubes and ovaries for disease of the latter organs of several years standing, which occasioned severe dysmenorrhœa. The patient vomited at intervals after the operation until her death, which occurred on the eighth day, the vomiting being peculiar, in that large quantities of fluid were regurgitated without much straining. The abdomen became greatly distended and tender, the temperature rose to 101°, and it was supposed that she had succumbed to a low form of peritonitis. The autopsy revealed extreme dilatation of the stomach, the organ filling the abdominal cavity and extending to within three inches of the symphysis, while the intestines and omentum were crowded into the pelvis. There was no evidence of old or recent peritonitis. Death was clearly due to exhaustion. The stomach contained over a gallon of fluid and showed marked atrophy of its coats, especially of the muscular. The natural inference was that there had been a long-standing gastritis, which led to an atonic condition of the organ, and that the latter under the influence of some causes acting after the operation suddenly dilated. The history of the case, and the results of the physical examination, showed that the enlargement had taken place after the operation. There was no pyloric obstruction. What these causes were it is difficult to say. It might have been due to the poor condition of the patient, the vomiting, or (as explained by Morris) to the rapid secretion and accumulation of gastric fluid. The patient had had an omental hernia, a condition which Kussmaul believed favored, or directly caused dilatation, by reason of the direct traction exerted on the fundus of the stomach.

He remarked that two questions suggested themselves in connection with the case, viz.: Could the complication have been foreseen before the operation, and ought it to have been recognized and treated subsequently? While it would have been impossible to foretell the sudden dilatation, the case taught the lesson that every patient who was about to be exposed to the

risks of laparotomy should be thoroughly examined, since only in this way could the integrity of every organ be assured. Gynecologists were too apt to confine their attention exclusively to the pelvis, at the risk of overlooking complications in thoracic or abdominal viscera.

In reply to the second question, it must be urged that the condition of the stomach was so very rare that it was quite excusable to mistake it for the obscure form of peritonitis which is so frequently encountered after laparotomy. Treatment would have been of little avail considering the condition of the patient, still it was possible that if the dilatation had been recognized earlier and the fluid had been removed by the stomach-tube the patient might have been saved.

In conclusion the author referred to the rare occurrence of the complication and cited reports of similar cases by Fagge, Goodrich, Morris, and others, Morris's case being almost identical with the one described in the paper.

DR. A. REEVES JACKSON, of Chicago, read a paper on

THE INTRAUTERINE STEM IN THE TREATMENT OF FLEXURES.

He confined his remarks to a limited class of cases. Many forms of flexion require no treatment, others are not improved, and still others are only made worse. He had not been satisfied with the results of incision and dilatation. He had used the stem for many years without bad results. Dysmenorrhœa is the main indication for treatment, sterility being a secondary consideration. His method of treatment is first to dilate by means of graduated bougies, then after a menstrual period he inserts a soft rubber stem, and keeps it in position by means of glycerine tampons. After six weeks a larger stem is used. As soon as the uterus becomes straightened, a permanent stem of vulcanized rubber is introduced, Chamber's bifurcated stem being especially useful. Recently he had employed one which did not separate at the end. This hard stem is worn for three months, and is then removed. The patient is examined in the course of a few weeks, and if the uterus remains in position it is removed. The success of the treatment lies in its *gradual* character.

The use of the stem had been severely condemned, but clinical experience showed its value. The speaker had seen great benefit, dysmenorrhœa and sterility being both removed. Many hold that pelvic inflammation is the main cause of pain in flexions, but the reader did not believe in the doctrine of such frequent inflammation. The stem when carefully used is no more dangerous than an intrauterine application. He had never seen any inflammation follow the use of the stem in his hands. The great trouble is that men try to straighten the organ too rapidly and forcibly, and without reference to the existence of subacute inflammation. He never uses a stem unless there is dysmenorrhœa; when the flexion is due to a fibroid or to pelvic inflammation, it should not be used. Out of sixty-seven cases treated with the stem, forty-one were cured. The conditions necessary for success are watchfulness, patience, and slow progress.

DR. OGDEN, of Toronto, was in accord with the paper. The uterus must always be straightened gradually, or harm would be done. If the organ is gradually accustomed to a foreign body, the result will be different, than if the stem is introduced at once. The speaker used tampons of dry cotton, dusted over with boracic acid, as it gives a better support than moist cotton.

PROF. LAWRENCE, of Bristol, said that in England stem-pessaries are received with general disfavor. His own plan of treatment is to proceed very slowly, dilating gradually with bougies, and then introducing a stem expanded at its upper end. He cited the case of a married lady who had been sterile for fourteen years, and who became pregnant after straightening the uterus. The main thing was to be sure that the whole trouble was due to the flexion.

DR. JACKSON closed with the remark that it is impossible to introduce pessaries into the canal of a flexed uterus, at least in the case of some American women.

DR. APOSTOLI, of Paris, read, in French, a paper on

SOME NEW USES OF THE CONSTANT CURRENTS IN GYNECOLOGY.

Alluding to the fact that loose and empirical methods of employing electricity in medicine had given place to the use of regular mathematical standards for regulating its strength, he compared the galvanometer to the balance in chemistry. Now, in employing the continuous current, it is always necessary to take into account two factors, the duration of the application and the intensity of the current expressed in milliampères. Thanks to the technique now adopted, it is possible to use a much higher dosage than formerly: when strong currents are employed, there is a caustic action at each pole, while the "trophic action," or nutritive changes will increase in the same proportion. In galvano-caustic applications within the uterus, it is intended that one pole shall cauterize freely, while the other, which is placed upon the skin, must be carefully watched, in order that it shall not cause pain and vesication. This is prevented by giving to the indifferent pole a large surface, so that the current shall be distributed over a large extent of skin, as well as by keeping it moist. By using the reader's pole, constructed of glazed earth, it is possible to apply currents varying from fifty to two hundred and fifty milliampères without causing pain or injury to the skin. This has made galvanism a valuable agent in uterine therapeutics.

Formerly, local applications were confined to the cervix uteri, now we know that it is the mucous lining of the body of that organ that forms the seat of inflammatory processes, dangerous by reason of the readiness with which they are transmitted to the appendages. It is necessary to attack the diseased mucosa directly, which can be done more safely and thoroughly by means of the constant current than by the curette; the former accomplishes the results more slowly, but surely, not only curing the endometritis, but also dispelling inflammations of the parenchyma of the uterus. The reader began, in 1882, to practise electrolysis in cases of uterine fibroid, his treatment being mainly directed to the interior of the uterus, for the following reasons:

1. The endometrium is nearly all diseased in cases of fibroma, and hence the hemorrhage will be checked by cauterizing it.

2. By modifying the nutrition of the mucosa, that of the adjacent neoplasm is also affected.

3. By introducing one pole into the uterus, the ope-

rator would be able to place the organ directly in the current. The reader was invariably accustomed in all forms of metrorrhagia, to place the positive pole within the uterine cavity, using the negative pole in other cases. As the result of his experience in nearly three hundred cases, he was ready to affirm that from ninety to ninety-five per cent. of fibrous tumors would, under this treatment, when continued from three to nine months, decrease in size from one-fifth to one-half, while the hemorrhages would be quickly and permanently arrested and the pressure symptoms would disappear.

The sphere of the constant current in gynecology was not confined to the treatment of endometritis and fibrous tumor of the uterus; its future was a great one, and the reader believed that it would in time constitute the principal curative agent in the medical treatment of pelvic troubles.

Dr. Chadwick said that he had followed the author's method of treatment during the past six months, but had not met with satisfactory results. In one instance the size of the uterus was definitely reduced after a few applications; in another, after eighteen applications, there was no appreciable change. In two instances pain and fever were produced, and two cases terminated fatally.

Dr. Apostoli closed by repeating that he had treated over three hundred patients by electricity for the relief of various pelvic affections, and very rarely seen any serious results follow the applications.

Dr. Chadwick, of Boston, read a paper on

THE OPERATION FOR VENTRAL HERNIA AFTER LAPAROTOMY.

He said that hernia usually appears a year or more after the operation. Supporting bandages do but little good. The symptoms are pain and dragging sensations in the abdomen. Strangulation does not occur, due to the fact that the neck of the hernia is large and yielding. If intestines or omentum are adherent, the hernia cannot be reduced. Hernia is more frequent than is supposed, but the data are imperfect. The incisions are now quite short, the wound heals better, and the pedicle is treated intraperitoneally, so that the abdominal wall is shorter.

The use of the drainage-tube may cause hernia. The prevention of this accident is highly important. Some operators close the peritoneum separately. Dr. Wylie has called attention to the importance of drawing up and uniting the edges of the divided fascia. The union of the fascia is the most important obstacle to hernia. The sutures must be placed near together, and the abdominal tension must be diminished immediately after the operation. Laxatives should be used only to this end.

Simon used to operate on these hernia without opening the abdominal cavity. This method was imperfect, as it did not result in union of the fascia. As regarded the operation for repair, it was merely an explorative incision, with the exception that in hernia the peritoneum might, or might not, be adherent. If intact, should it be opened, or simply pushed back into the cavity?

The muscles and fascia would be found to have retracted, and should the peritoneum be separated from them? Wylie dissected off the peritoneum; Hoffer sutured the peritoneum, fascia, and recti separately; Maydl denuded the edges of the recti muscles and sutured them. The author, in his case, had sewed the peritoneum separately.

[Dr. Chadwick then read the report of a case in which he had operated successfully for ventral hernia after laparotomy, and showed photographs.]

The discussion was adjourned to the following day.

THE BUSINESS MEETING

was held in the evening. The following were elected

OFFICERS FOR THE ENSUING YEAR.

President.—Dr. Robert Battey, of Rome, Ga.

Vice-Presidents.—Drs. James R. Chadwick, of Boston, and A. Reeves Jackson, of Chicago.

Secretary and Treasurer.—Dr. Joseph Taber Johnson, of Washington.

Members of Council.—Drs. F. P. Foster, of New York, C. D. Palmer, of Cincinnati, J. B. Hunter, of New York, and R. S. Sutton, of Pittsburg.

The following were elected

FELLOWS.

Dr. Howard A. Kelly, of Philadelphia; Dr. Horace T. Hanks and Dr. Bache McE. Emmet, of New York; and Dr. R. P. Kinloch, of South Carolina.

It was resolved to hold the next meeting in Boston, on the third Tuesday in September, 1888.

(To be concluded.)

NINTH INTERNATIONAL MEDICAL CONGRESS.

Held at Washington, September 5–10, 1887.

(Specially reported for The Medical News.)

SECTIONS.

Obstetrics.

WEDNESDAY, SEPTEMBER 7TH.

DISCUSSION ON CÆSAREAN SECTION.

Professor Simpson, of Edinburgh, in opening the discussion, expressed himself as very largely in accord with the views so clearly formulated by Professor Lusk in his able paper, further illustrated by Dr. Sänger and Dr. Wathen. He wished to maintain for the obstetrician and the general practitioner the right still in certain cases of difficult labor to break up the head of the child to save the mother's life. Certainly the cases are few, in which the sacrifice of the child's life is demanded, and they are becoming more rare as the sanitary conditions of population improve. In Edinburgh, rickets even is becoming very rare; and as for malacosteon, the only case he has seen for many years occurred not in a pregnant woman, but in one who suffered from dyspareunia in consequence of the narrowing of the pubic arch. The result is that the indication for any form of head reduction is very seldom met with.

But this also narrowed the opportunity for gaining experience in the Cæsarean operation. He had no doubt that the field of application of laparotomy would extend with the appreciation of the conditions under which it can be successfully carried out. It is important in regard to the prognosis to differentiate between two groups of cases. In the first, the practitioner does not get the chance of operating until the woman is exhausted, the child may be dead, and dangerous septic processes are already at work. In such cases, it sometimes gives the patient the best chance of recovery to

open the abdomen and uterus, and without regard to his own reputation the practitioner finds it his duty to give her that one chance. In the other group of cases, the practitioner has the patient under observation before labor sets in, and can choose his time and mode of interference. In such cases a successful result may almost always be expected, and when Sänger and Leopold have diminished the mortality of the method with the sero-serous suture, he (Prof. S.) believed that most obstetricians would feel themselves constrained to adopt the Sänger method in carrying out the operation. The Porro procedure will still have its application in a few instances, as when the uterus is damaged, or the seat of disease; but he thought Professor Lusk had rendered a good service in impressing on the profession the importance of attaining clear impressions as to the conditions of safety in Cæsarean operations.

Dr. A. Martin, of Berlin, summarized his remarks in the following propositions: The abdominal operation is indicated,—1. When it seems impossible to bring a living child through the pelvis in any way. (Take care not to operate too soon!) 2. In cases of neoplasmata; myomata narrowing the canal, or endangering the progress of parturition; carcinomata colli. 3. Other reasons: diseases which show the lives of mother and child endangered by the process of parturition and puerperium.

What operation? Cæsarean section when we can hope that the patient may be able to become pregnant again, even if the operation must be repeated. The Porro operation, or total extirpation, when the character of the tumor, or its seat, or the disease is necessarily fatal.

Dr. Balls-Headley, of Australia, said that the main points in this class of cases are a clear diagnosis that the child cannot be born through the natural passages and a determination to carry out the necessary operation without attempting measures believed to be futile. He limited himself to the two conditions—cancer of the cervix and contraction of the pelvis. Twenty years ago, he assisted Dr. Greenhalgh, of London, in a case of Cæsarean section on account of epithelioma of the vaginal portion. The child and mother survived; the cancer subsequently disappearing. Recently he had seen a case of labor, the cervix the seat of malignant infiltration. He thought craniotomy, with nicking of the cervix, would meet the indication, and the operation was performed. The cervix was rent, and the woman died. In such a case, he would now extirpate the womb.

At a little village, near Bonn, diseases of the bones were frequent, and he remembered one woman who had been the subject of the operation six times. At the beginning of this year, a dwarf, four feet high, came to him. She was in the seventh month of pregnancy. The true conjugate diameter measured one inch. At the ninth month, he performed Porro's operation, mother and child surviving. The membranes were found to be adherent, and in view of the certain inability of escape of discharge by the os, it is quite probable that had the uterus not been removed, the patient would have died. The operation was easy, occupying only twenty-five minutes.

Dr. W. W. Jaggard, of Chicago, said, with reference to the *relative indication* for Cæsarean section—that is, a pelvic contraction in which the conjugata vera measures 2½ to 3⅛ inches—1. Craniotomy does not require any higher degree of operative skill than it is fair to presume every qualified obstetrician possesses, provided good instruments are employed—for example, Carl Braun's curved trepan and cranioclast. 2. The mortality of the operation in pelvic contractions of 2½ to 3⅛ inches, when the woman has not been antecedently infected, and average skill with antiseptic precautions is applied to good instruments, is, as remarked by Barnes, practically *nil*. The statistics of the Vienna school abundantly demonstrate the truth of this statement. 3. An essential condition to the relative indication for Cæsarean section is the consent of the mother, obtained without direct or indirect coercion. He had never seen a woman elect Cæsarean section, when all the facts in the case had been fairly and honestly presented to her. 4. He was under the impression that there is much sentimentalism in the recent extraordinary interest in the child's as compared with the mother's life. The satisfaction of saving the child by Cæsarean section is akin to the delight experienced after the successful performance of a difficult scientific experiment. This interest ceases so soon as the fact of the birth of a living child has been demonstrated to witnesses and the case recorded as successful. As a matter of fact, the expectancy of life in such children is very much less than in those of normal birth. More than seventy-five per cent. perish within a brief period of their entrance into the world.

Dr. W. T. Lusk thought the limit for craniotomy should be placed at a conjugata vera of 2¾ inches; below this limit the indication for Cæsarean section is absolute.

Dr. J. A. Doléris, of Paris, desired to call attention to two facts:

1. It is customary in France to deliver the fœtus per viæ naturales, whenever this is possible, even if the child be sacrificed. Under antiseptic conditions the maternal mortality is *nil*. He had performed craniotomy with perfect success, when the conjugata vera measured considerably less than 2½ inches. 2. It is of grave prognostic moment when the incision in Cæsarean section passes through the placental site. The danger is from secondary internal hemorrhage. The immediate cause of this hemorrhage is uterine inertia; the uterine inertia is frequently produced by the elastic ligature, applied around the lower uterine segment, paralyzing the motor centres of the uterus, and rendering ergot entirely ineffective. He recommended instead of continuous compression by the elastic ligature, temporary compression by the hands.

Dr. J. A. Doléris, of Paris, read a paper entitled

TREATMENT AND RESTORATION OF THE NECK OF THE UTERUS DURING PREGNANCY.

He narrated the histories of four cases of bilateral laceration of the vaginal portion, in which Emmet's operation was successfully performed during pregnancy. Among the symptoms indicating operative procedure, the following were noted, exaggerated nervousness, incoercible vomiting, rebellious pelvic neuralgias, threatened abortion. He drew the following conclusions: 1. The importance of traumatism of the neck of the gravid uterus has been too much exaggerated.

2. When the condition of the neck of the uterus demands surgical reparation, the menace of abortion, instead of being a contraindication, justifies the operation. During and after the operation, anti-abortive medication to be instituted—*i. e.*, chloroform, absolute rest, and opiates. The danger from hemorrhage is not greater than in the non-gravid uterus.

PROFESSOR LEISHMAN, of Scotland, while admitting that preconceived opinion is a serious barrier to the general admission of new truth, desired to express a hope that the Section would receive with great caution any such statements as seemed to be involved in the conclusions assumed by Dr. Doléris in his paper. He did not venture to deny that there might be exceptional instances, in which such an operation was warranted, but what he wished to express emphatically was, that operation on the cervix during pregnancy was (as in the case quoted by Dr. Doléris) very liable to lead to abortion, and that if such an operation is to be admitted at all, it should only be in very exceptional instances and after careful consideration of the special circumstances of a given case. He trusted the Section would not express any opinion in favor of the operation without making this perfectly clear.

DR. THOMAS OPIE, of Baltimore, said that a lady had been sent to him by her physician in January last, for treatment for lacerated cervix. He fully trusted her statement and verified the diagnosis of her attendant. He operated on the bilateral laceration of the cervix with the result of an abortion about the sixth week. The delicate relationship between the embryo and uterus, the fact of many pregnancies going to full term despite lacerations, and his own warning would make him timid about all surgical operations on the gravid uterus.

DR. JOSEPH KUCHER, of New York, read a paper entitled

ON THE RELATION OF THE ATMOSPHERE TO PUERPERAL FEVER.

It has been conclusively demonstrated that we are unable to render a locality absolutely free from germs, and the question then arises, What influence has air impregnated with germs upon the parturient female, particularly can such air cause puerperal fever? The older physicians, though not ascribing the origin of every case of puerperal fever to the surrounding air, were thoroughly convinced that at certain times, epidemics of puerperal fever had been started by atmospheric influence alone. So-called nosocomial malaria was frequently supposed to be the cause of puerperal fever, until Semmelweiss pointed out that this disease always originates from the absorption of septic matter through lesions in the genital tract, and that the instruments and the fingers of the physician and nurse are the chief means of introducing this septic matter to the numerous foci of absorption. Coincidently with this view, fear of the deleterious influence of the atmosphere abated.

When we have once come to the conclusion that the danger from atmospheric influence is insignificant, as contrasted with the dangers of infection from contact, we will not commit such mistakes as narrated by Le Fort, in which an epidemic numbered among its victims the daughter of a colleague. To secure the greatest possible safety from epidemic influence, the patient was delivered at her country seat, and died there of puerperal fever. Careful examination disclosed the fact that the nurse had recently been in attendance upon four women, who had died with similar symptoms; though no case of puerperal fever had occurred in the practice of other midwives, or of the two physicians living in the vicinity. The original infection of the nurse had been through a case of fistulous abscess of the thigh.

DR. T. MORE MADDEN, of Dublin, presented a paper on

THE PREVENTION AND TREATMENT OF PUERPERAL FEVER.

which was then read.

That a disease so many-sided in its genesis and propagation can ever be completely eradicated by any hygienic or antiseptic measures, seems to the author utopian.

The following preventionary measures were recommended:

1. The most scrupulous attention to puerperal hygiene.

2. The preparatory treatment of the patient—suitable nourishment, fresh air, and appropriate tonics—of primary importance.

The author ordered a mixture of potassium chlorate, iron, and quinine, to be taken during the last couple of months of gestation, and he has never seen puerperal septicæmia in a patient who had been thus treated before her confinement.

3. From the first day after delivery until convalescence has taken place, the uterine cavity as well as the vagina should be daily thoroughly washed out with water, as hot as may be well tolerated, to each pint of which may be added an equal quantity of sanital, which, from its absence of color, as well as its aseptic properties and agreeable odor, seems specially suitable for the purpose. Carbolic acid and rectified spirit of turpentine are good, while corrosive sublimate is unreliable and dangerous.

4. He does not use a siphon syringe, but employs More Madden's irrigator.

5. As a general rule, liquor creasotæ (B. P.) should be administered two or three times daily in full doses. This may be advantageously combined with the tincture of the chloride of iron.

6. The prevailing type of puerperal fever is of a distinctly remittent typhoid character, and should be primarily treated by appropriate general stimulants and nutriments, as well as by attention to the removal of all septic matter from the uterus, in the way already pointed out. Turpentine, iron, quinine, ergot, and opium, are the only medicines that deserve consideration. Turpentine, the most important, may be exhibited per os, or per rectum, or by the skin. Turpentine is stimulating, depurating, increasing the elimination by the skin and kidneys, and arrests the development of microörganisms.

General Medicine.

THURSDAY, SEPTEMBER 8TH.

DR. W. F. PAVY, of London, made the following remarks on

DIABETES,

speaking entirely without manuscript, and stating in explanation that he had time only to arrange his

thoughts in a concise form, but not to submit them to writing.

(See page 357.)

DR. HERRICK, of Cleveland, remarked that it had afforded him great pleasure and delight to listen to Dr. Pavy's remarks on this subject. He desired, however, to ask one question with regard to the treatment of the disease. Dr. Pavy had stated that he looked on the urine as the index of the disease—the presence or absence of sugar. Yet in speaking of the disease, he referred to it as an incapacity for the assimilation of saccharine material in the circulation of the liver. Did Dr. Pavy give anything to aid in the assimilation of this principle?

DR. PAVY replied that at the beginning of the disease, when the patient was dieted, the sugar in the urine diminished, and that after the treatment he had described was continued a while, the sugar entirely disappeared. You now make the test of allowing the patient a little bread. When this can be given without producing saccharine urine, he looked on it as an indication that the assimilative power had become greater.

DR. A. B. ARNOLD inquired whether the observations of Dr. Pavy would lead him to agree with the statement that diabetes is more frequent in the Hebrew race than in others.

DR. PAVY replied that his observations coincided with this statement; and not only that, but he had also found that the disease in the Hebrew is more amenable to treatment.

DR. TROAX asked whether death in diabetes is due to acetonæmia, as has been stated.

DR. PAVY replied that he was not a believer in acetonæmia. In response to a question by Dr. Holt, of Vermont, Dr. Pavy stated that although the bromides had been extensively used within the last few years, he had not much faith in them.

DR. R. W. PHILLIP, of Edinburgh, Scotland, forwarded a paper on

THE ETIOLOGY OF PHTHISIS,

which was read by Dr. Stockman, of Edinburgh.

It was not his intention, the author said, to discuss the pathological conditions present in phthisis, nor yet its dependence upon the bacillus tuberculosis. He would start, on the contrary, with the acceptance of the doctrine of the unity of phthisis, as well as that of its dependence upon the presence of the bacillus. The observations of Koch had, in his mind, established these facts. He desired rather to deal with the causes of the principal symptoms—progressive emaciation and asthenia, increasing hæmatosis, and the absorption of waste products. He desired especially to emphasize the absorption of waste products. What, then, is the immediate action of the bacillus tuberculosis in causing death? Their toxic powers are not limited to their presence, but are due in all probability to a product of their action. We know that a distinct variety of fermentation follows the introduction of a certain microbe into a medium, and that the exclusion of the microbe warrants the absence of this fermentation.

The author's investigations of the lesions in organs as well as of the sputum were then narrated at some length, together with a consideration of the methods employed. Most important was that in which he used a carefully prepared alcoholic extract of the sputum. Of this extract a small dose was given to frogs. These animals at once showed indications of having been poisoned. The symptoms in all cases were the same. Depression rapidly ensued without, however, the presence of other phenomena. In mice also it was found possible to produce toxic symptoms with a small dose of the extract. When a large dose was given, the intensity of the depression was proportionately increased. The most interesting point in the experiments was, however, the fact that when small doses were given to animals for a period of several days, progressive emaciation gradually ensued, and at the same time, fever and great thirst were observed.

The experiments were then continued in connection with the administration of certain remedies. It was found that atropia was antagonistic to the action of the toxic principle contained in the extract. Little notice had been made of the treatment of phthisis by atropia, and the author was aware of no author who gives it prominence but Bartholow, in his *Therapeutics*. In conclusion, he said, that it seems probable that the sweating, the fever, and probably to some extent the emaciation of phthisis, are due to the presence of a ptomaine, to which atropine acts to some extent as an antidote.

DR. WM. B. NEFTEL, of New York, then read a paper on

THE ETIOLOGY OF SOME OF THE DISEASES OF WOMEN.

Tight lacing was the chief etiological factor discussed. In accordance with the customs of the times, the author had resorted to experiments on dogs. Bandages were placed around the waists of the animals and drawn so tight as to occasion not a little discomfort, even, in some instances, alarming dyspnœa, compelling the removal of the band. When the animal was killed after having undergone the tortures of tight lacing for a time, there was found an engorgement of the blood-vessels of the abdominal organs. To what degree it differed from the usual post-mortem engorgement was not accurately stated. Tuberculosis was not produced. The evils of the "corset-liver," causing engorgement of the liver and interfering with its chylopoietic functions, were referred to.

General Surgery.

THURSDAY, SEPTEMBER 8TH.

DR. DONALD MACLEAN, of Detroit, said that the mortality in olden times was largely due to the defective measures of controlling bleeding. The method described by Dr. Dennis seems open to the objection that the elastic band might slip, when the operation was delayed. He had amputated the hip a number of times, and has had the utmost satisfaction from the use of Lister's abdominal compressor. He believes that it is superior to any other method for controlling hemorrhage in this region. If the compressor is not at hand the fists of an assistant will answer the purpose, the compression being made on the umbilicus.

DR. WEEKS, of Portland, Me., has employed an elastic compressor consisting of the ordinary black rubber bandage, doubled so as to make four strands two feet in length. This is passed between the thighs, brought

between the tuberosity of the ischium and the rectum, and up in front of the femoral artery. An ordinary roller bandage is placed over the artery. The ends are brought over in front and held by an assistant. This also controls hemorrhage from the gluteal vessels.

DR. REYHER, of St. Petersburg, thought that in emaciated subjects it would not be advisable to make such sudden compression as is caused by Lister's compressor. He had used the rubber tourniquet, but without special satisfaction. He had performed another operation. He made an excision of the head of the bone, and then placed one stick through the wound and another in front, securing them together by rubber bands. The same thing is done with the posterior portion. The flaps can then be cut without hemorrhage. In these operations he had no disagreeable results from this measure.

DR. W. BOONE, of Shanghai, China, said that no one had alluded to the method proposed by Dr. Furneaux Jordan. Where there is sufficient tissue free from disease, this seems to present many advantages. This operation is performed by making a circular cut through the muscles low down, making a flap, and then turning back the flap. The bone is next divided. An excision of the head is next made. In this way you cut the vessels low down and the control of bleeding is absolute.

DR. PALMER, of Jonesville, Wis., had used a method similar to that of Dr. Reyher. Instead of sticks, he passed pieces of sharpened steel wire through the limb in front and behind the bone, and then secures them to other pieces in front of and behind the limb.

DR. CHAVASSE, of Birmingham, Eng., said that in amputations for malignant disease, the less tissue left the better, therefore the operation of Mr. Furneaux Jordan is not a good one for this particular disease. The best method is that known as Brodie's operation, by anterior and posterior skin flaps. In children, the best plan for controlling hemorrhage is by digital compression. This is also applicable in thin subjects. He had also used Davy's rectal staff with satisfaction.

DR. ASSAKY, of Bucharest, Roumania, then read a paper on

IODOL.

He said that wounds unite under iodol by first intention. This union, however, being the result of various and complex conditions attending operation, it is not possible to attribute to iodol alone the absence of suppuration and inflammatory conditions. In wounds which gape and suppurate iodol is an excellent antiseptic. It rapidly retards suppuration, renders it inodorous, reduces the frequency of dressing, and hastens considerably cicatrization. In ulcerating or gangrenous wounds iodol aids to resist the destructive process, and changes the wound, after a variable time, to a healthy granulating condition. This action of iodol extends itself to hard chancres. In case of soft chancres the result is variable. Sometimes it transforms them into a simple wound with brief delay; at others it is insufficient for this purpose, and it becomes necessary to employ in addition, locally, antiseptic lotions. The same is true with reference to open venereal buboes of the groin. The powdered iodol has this advantage over iodoform, that it is free from odor and is not toxic in its effects.

Doses of iodol of from $\frac{1}{10}$ of a grain to 30 grains daily, produce no functional trouble, even if continued a long time. These doses give marvellous results in tertiary syphilis and in scrofulous affections. In the secondary stage of syphilis, taken internally, it rapidly destroys the syphilitic manifestations. Iodol seems to aid the general nutrition and increase strength and flesh. It is indicated in all cases of specific malnutrition. Iodol is an antipyretic. In acute infectious diseases, such as erysipelas, etc., it causes a rapid fall of temperature.

MR. EDMUND OWEN, of London, read a paper on

PARACENTESIS OF THE ARTICULATION IN THE EARLY STAGES OF DISEASE OF THE HIP-JOINT.

It is generally admitted that the sero-synovial effusion, associated with early acute disease of the hip-joint, has an influence on the stiffening and faulty position of the limb. In these cases examination will usually show a deep-seated fulness below the middle of Poupart's ligament, which advances the femoral vessels toward the surface. There is also swelling behind, between the great trochanter and the tuberosity of the ischium. An illustrative case was given. A boy, nine years of age, was admitted to St. Mary's Hospital, London, on account of extreme pain in the right hip and knee. The limb was semiflexed, and the foot slightly inverted. The attempt to bring down the limb caused tilting of the pelvis and arching of the loins. There were all the signs usually regarded as indicating the first stages of hip-joint disease. There was slight fulness in the positions indicated. The pain had come on suddenly two weeks previous in a child apparently healthy. Chloroform was administered, but the leg remained stiff. A trocar and canula were passed through the back of the capsule, and a teaspoonful of sero-purulent fluid containing flakes of lymph was withdrawn. The femur could then be extended, and the joint was loosened. An extension apparatus was applied, and the patient put perfectly at rest. On the fourth day he was free from pain. The convalescence ran a perfect course, terminating in recovery in two weeks.

It may be said that this was not a case of hip-joint disease, but one of simple synovitis. This was admitted, but if the capsule had not been tapped there might have developed suppurative arthritis. If this is admitted, the author claimed that potential hip-joint disease might be cured by paracentesis. We should always be on the lookout for this condition. Where we cannot be absolutely certain that there is distention, we should give the patient the benefit of the doubt, and perform exploratory puncture. This, if done with clean instruments and ordinary care, is devoid of risk.

DR. L. H. SAYRE, of New York, believed that the case related if allowed to go on, would probably have ended in rupture of the capsule and, perhaps, destruction of the head of the bone. In the early stage of the disease, where the limb is flexed, everted, and abducted, as a result of over-distention of the capsular ligament, if the fluid is not absorbed by rest and counter-irritation, it is proper to puncture the joint, thus treating the hip-joint the same as any other joint.

DR. G. W. BOONE, of Shanghai, said that two years ago his attention was called to the injection of joints with glycerine and iodoform. He used it in two cases where there was evidence of the first stage of hip-joint disease. In one case the symptoms disappeared, while

the other case ran the ordinary course of a case of hip-joint disease.

Dr. Lange, of New York, said that in the case reported the child probably had tubercular disease near the hip-joint, which ruptured into the joint, causing effusion. In such cases the painful symptoms can be relieved by tapping the joint. To regard this as an effective treatment for hip-joint disease, which must be regarded in children as essentially a tubercular affection, seems hardly proper. This case is not concluded, and we do not know what the final result will be.

Dr. Owen said this was not a case of tubercular process in the joint. The attack began two weeks before admission; was an acute effusion, and recovered within two weeks after operation. Tuberculosis does not run this course.

Dr. Burnays, of St. Louis, had one case of epilepsy and mania for which he trephined. There was a clear history of injury to the head. The skull had been trephined without good effect. He also trephined, and when the bone was removed the dura mater came up into the opening. This he incised and at once there was an enormous flow of cerebro-spinal fluid. He introduced four catgut sutures to close the opening in the dura mater. The patient recovered, but there was no immediate improvement, although since then there has been some lessening of the number of the seizures.

Dr. T. R. Manly, of New York, reported a case of

GUNSHOT WOUNDS OF THE ABDOMEN

in the left epigastric region. The patient was seen two hours after the injury. The abdomen was greatly distended and evidently contained fluid. The wound was probed with great care, but the point of entrance into the abdomen could not be found. An incision was then made in the linea alba. When the peritoneum was punctured about half a gallon of blood escaped. The hemorrhage was from a branch of the inferior mesenteric artery. This was secured with a ligature. A double perforation was found in the descending colon; this was closed with the Lembert suture, including only the serous and muscular layers. The bullet was not found. The abdominal incision was closed and dressed antiseptically; it, however, failed to unite; in other respects the patient did well. The incision was again closed, the peritoneum being united with a separate row of sutures and the other layers with silver wire. On the third day it was found that the central portion of the wound had opened, but that the peritoneum had united. The patient eventually recovered completely.

Dr. Robert Newman, of New York, read a paper on

THE USE OF THE GALVANO-CAUTERY SOUND, PARTICULARLY IN HYPERTROPHY OF THE PROSTATE.

The instrument consists of a smooth sound with a fenestra at its lower extremity; at this opening is a piece of platinum wire in connection with a galvano-cautery battery. By pressing a key in the handle of the sound, the platinum wire is heated to a bright red color. This does not destroy tissue. The instrument is introduced until the lower extremity reaches the prostate gland, when the current is passed through the platinum wire. These applications are repeated at intervals of three to five days. The author has employed this method of treatment in fifteen cases, seven of these being cases of hypertrophy of the prostate gland. In all these instances there was improvement in the symptoms presented and a decrease in the size of the prostate.

Dr. F. Lemoyne, of Pittsburg, read a paper on

UNUNITED FRACTURE OF THE FEMUR SUCCESSFULLY TREATED BY DOUBLE SPLICE AND WIRED CLAMP.

The method described had been employed in three cases, two of the humerus, and one of the femur. In the femur case the various proceedures employed in cases of ununited fracture were tried, but no union followed. Eight months after the accident the mobility at the seat of fracture was very distinct. The seat of fracture was then exposed by two incisions, one on the anterior and the other on the external aspect of the limb. The fragments were found attached by firm bands of fibrous tissue and the bone tissue was softened; the intervening tissue was cut away. The lower extremity of the upper fragment was then sawed off so as to form a wedge-shaped piece. The upper end of the lower fragment was sawed so as to leave a corresponding V-shaped depression. The extremities were then brought into apposition. A hole was made in each fragment so that the two openings were two and a half inches apart. A steel clamp, its extremities being bent at right angles, was laid upon the anterior surface of the femur, the ends being inserted into the holes already prepared. This was secured to the bone by three bands of wire encircling the limb at the seat of fracture. The limb was placed on a posterior inclined plane, the foot being elevated about eight inches. Sole-leather splints were applied on the external, anterior, and internal surfaces, and the patient was kept as quiet as possible. High inflammatory action with free suppuration occurred. In five weeks there seemed to be some union and the clamp and wire were removed. The limb was still kept in leather splints. One year after the operation, there was good union. The patient could bear his entire weight on the limb. There was, however, shortening to the extent of two and one-half inches.

Dr. T. R. Manly, of New York, said he had had considerable experience in wiring the shafts of bones, particularly in fractures of the thigh. If there is much shortening we should wire the bone at once. We do no harm by making a free incision down to the bone and the silver wire causes no irritation. He leaves them in permanently and the results have been satisfactory.

GYNECOLOGY.

THURSDAY—SEPTEMBER 8TH.

Dr. Joseph Taber Johnson, of Washington, read a paper on the

TREATMENT OF THREATENED OR COMMENCING PERITONITIS AFTER LAPARATOMY BY BRISK PURGATION.

The idea of the propriety of administering purgatives when peritonitis was imminent or present after laparotomy had been performed, occurred to the author about three years ago, while attending a patient under such conditions, together with persistent vomiting. Several small doses (fractions of a grain) of calomel were given in quick succession, the bowels were freely moved, and the patient recovered. The theory of this

method of treatment was that intestinal peristalsis was encouraged and the serous accumulations in the abdominal cavity which accompany peritonitis were absorbed, passed into the intestine, and carried off. Lawson Tait had advocated the same plan, and also Wylie, of New York. Tait's idea was that the free purgation which was excited in this condition, answered the purpose of drainage. The method is more logical, theoretically, than the use of opium, since the latter paralyzes the muscular power of the intestine, and thus favors peritonitis. Three cases were narrated in which life was probably saved by the timely administration of calomel and Rochelle salts, and it is now a customary plan of procedure with the author to keep the bowels open after the third or fourth day following laparotomy, instead of keeping them confined for a week or ten days, as was formerly the custom.

DR. A. MARTIN, of Berlin, then read, in German, a paper on

TOTAL EXTIRPATION OF THE UTERUS PER VAGINAM FOR CARCINOMA.

He thought that sufficient material was now at hand to decide two questions which should be asked concerning every new method of surgical treatment. Those two questions were:

1. Is the success of the operation such that it will promise good results to other than very expert operators?

2. Does the extirpation of the uterus for cancer offer permanent results which are superior to those obtained by any other method of treatment now employed?

It must be admitted that the published reports of operations in English and German literature are still meagre and isolated, though there can be no question that the operation has obtained a decided recognition in Germany. The results of the operations have greatly improved as experience has increased. Thus, in 1881, Olshausen collected 41 cases, with a mortality of 29 per cent.; while, in 1886, Hegar collected 257 cases, with a mortality of 23 per cent. The author has collected a table of 311 cases, extending to the end of 1886, the operators being Fritsch, Leopold, Olshausen, Schröder, Staude, and himself, in which the mortality has been only 15.1 per cent. From the gradual improvement in the results, the belief seems warrantable that this mortality will become still smaller. Even now the results as to immediate mortality are better than obtained in Küster's recently published table (1883) of 778 cases in which amputation of the breast for cancer was performed. The author believes, therefore, that this operation deserves a prominent position among the different methods for treating the cancerous uterus.

As to the question of permanency of result to those who recover from the operation, after tabulating the cases of Leopold, Schröder, and Fritsch, the author gives the result in his 44 cases, in which recovery had taken place, all the operations having been performed previous to 1886. Of these 44 there was recurrence in 13, the remaining 31, or 70.3 per cent., were still in health.

The supravaginal operation of Schröder for that form of cancer of the cervix, which is developed from the pavement epithelium covering its mucous membrane, is recommended by Hofmeier, as the more radical operation. The author's experience in that respect, however, has not coincided with Hofmeier's, since 6 cases out of 28 were fatal and all of the others succumbed within less than three years from recurrence. After the high excision pregnancy is not impossible, and Hofmeier himself considers that such an event would be fraught with great danger to the patient. The author, therefore, prefers the operation for complete extirpation of the uterus in all forms of cancer of the cervix, the operation being indicated only in those cases in which the tissues surrounding the uterus are entirely free from cancerous infiltration. If a radical operation is performed when the tissues are infiltrated a permanent cure should not be expected.

The technique of the operation has little bearing upon the results. It matters little whether the wound remain unclosed, or be closed and drained. The ovaries and tubes should be removed if practicable and all hemorrhage checked. There is no evidence that those who recover experience any loss as to sexual feelings of feminine form. The author, therefore, recommends this operation as the most suitable one for all cases in which the cancerous disease is limited to the uterus itself.

DR. R. JACKSON, of Chicago, read a paper entitled

MODERN TREATMENT OF UTERINE CANCER.

The great difficulties surrounding this subject were stated to be our want of exact information as to its beginnings, and the uncertainty which attends operative procedures as to the complete removal of diseased elements. The diagnosis should not only determine the existence of the disease but also its extent. Since this is practically impossible who can tell when an operation has been radical in its scope?

The best results from operative procedures thus far, with reference to subsequent immunity from the disease, have been obtained by the use of the actual cautery. Supravaginal operations of the various types have also given excellent results. The statistics for the complete extirpation of the organ by abdominal operations are so discouraging that it is not strange that the operation has been practically abandoned. The results from vaginal hysterectomy with a few operators have been much better, but when we compare these and the duration of life of those who survive the operation with the estimated duration of life for those who have uterine cancer but do not submit to operation the balance is largely in favor of non-interference. Recurrence of the disease after vaginal hysterectomy takes place in four and a half months on the average, and this is certainly no better than can be obtained by less radical procedures. If hysterectomy has a field, it is in connection with disease of the body of the uterus, and this occurs with comparative infrequency, and is very difficult of diagnosis. In the author's opinion the attempt to establish hysterectomy as a suitable operation has been unsuccessful. His conclusions are:

1. Any operation for cancer which does not completely remove the disease will be followed by recurrence.

2. During life the limit of cancerous disease originating in any part of the uterus cannot be known; hence, no operative procedure can afford a guarantee of complete removal.

3. In view of this fact no operation is justifiable which greatly endangers life, provided other and safer means are available.

4. Vaginal hysterectomy is more dangerous, in a certain sense, than the disease which it is designed to remedy. Some individuals will live longer without the operation than with it.

5. Other methods less dangerous than hysterectomy are available for ameliorating and retarding the progress of the disease. They also show as good results as regards recurrence, hence, they are to be preferred.

6. Vaginal hysterectomy does not avert or lessen suffering; it is not a useful but an injurious operation, and, therefore, is unjustifiable.

DR. MARTIN, of Berlin, remarked that the statistics which Dr. Jackson had used were old and inapplicable to the present status of hysterectomy. Of his (Martin's) statistics for hysterectomy which gave data to the end of 1886, 66 cases alone could be used as cases of cancer. Of that number, 44 remained cured more than a year and a half after they had been operated upon.

Dr. Cordes then read, for DR. VUILLET, of Geneva, a paper entitled

THE BURIED SUTURE WITH IODOLIZED SILK IN VESICO-VAGINAL FISTULA.

The author has as yet tried this material in the manner specified in the title of the paper in but one case. The result, however, was perfectly satisfactory, the wound being aseptic, and doing well, and he thought the method worthy of further trial.

A second paper by the same author was read entitled

THE DILATATION OF THE UTERUS BY PROGRESSIVE OBTURATIONS.

The method consisted in repeated pluggings of the cavity of the uterus with iodoformed gauze, under perfectly antiseptic conditions. Each plug or tampon was allowed to remain twenty-four to forty-eight hours, and six to eight operations were usually necessary to obtain the required degree of dilatation. By that time the cavity had become so large that its entire surface could be photographed or inspected with the naked eye. The operation was considered especially useful for the investigation of cases of malignant disease and intra-uterine new growths in general. It was asserted that no septic accidents had ever resulted from the operation, the means of dilatation constituting a perfectly antiseptic dressing, and also exerting as great a degree of dilatation as could be desired. It was also observed that this operation had a very favorable effect upon women suffering from neuroses, in the same way that pregnancy does.

DR. TRENHOLME, of Montreal, read a paper entitled

EXTIRPATION OF THE UTERUS FOR BLEEDING MYOMA.

One great difficulty in the treatment of such cases consisted in the treatment of the pedicle, the conditions of the stump being usually very unfavorable for such treatment, especially if the extraperitoneal method be used. The author's plan in such cases was, first to split the tumor through the centre, then enucleate each segment in turn from its peritoneal covering. The two flaps which were thus formed were then brought together and closely united with a cobbler's stitch. A stump being now made, it could readily be brought up to the surface of the body and clamped. Or the pedicle might be dropped, and the author thinks this method superior to that with the clamp. In some cases he had cut out the tumor by means of a wedge-shaped incision, which was then closed with a layer of deep followed by a layer of superficial sutures. Silver sutures were preferred in all cases in which it was possible to use them. Should peritonitis supervene, he had usually been able to control it by using hot fermentations.

DR. CLARKE, of Boston read a paper entitled

URETHRAL CARUNCLE, ITS HISTOLOGY AND PATHOLOGY.

Various opinions were cited with regard to the structure and significance of these bodies. The intense annoyance and pain to which they give rise suggest an abundant supply of sensory-nerve filaments. The author had made a careful histological study of the subject, and the results were seen in a series of microscopical sections, which were photographed and projected upon an illuminated screen. The conclusion of the author was that the caruncle is a papillomatous new growth which may be of indefinite duration, but does not tend to retrograde metamorphosis.

DR. NELSON, of Boston, then read a paper on

THE RELATION OF MICROÖRGANISMS TO UTERINE MYOMATA.

A single case was reported in which a microbe was discovered in and cultivated from an uterine myoma. The author stated his case with the greatest reserve, and did not presume to draw any positive conclusions from such limited experience. The greatest care had been exercised in the cultures, which had been made upon agar-agar at a temperature of 100°, and had reached the fifth generation. Tubes containing the fourth and fifth generations were shown. The microbe resembled that of anthrax, morphologically, being about half the size of the latter. Photographs of it were projected upon an illuminated screen.

THE REMOVAL OF UTERINE MYOMATA BY ABDOMINAL SECTION.

DR. DUNLAP observed that in his early experience the greatest difficulty attending these operations concerned the treatment of the pedicle. He found it a good plan to make flaps of peritoneum, cover the stump with them, and stitch all together with the cobbler's stitch. He believed that in most cases myomata should not be operated upon. In more than forty years' experience he had found that the maximum of development in nineteen cases out of twenty was reached before the tumors became a source of danger to life. If an operation were done he thought the use of the clamp should be avoided, if possible.

LARYNGOLOGY.

THURSDAY, SEPTEMBER 8TH.

DR. W. E. CASSELBERY, of Chicago, Ill., read a paper on

NASAL FIBROMATA.

He gave the history of a case in which he removed the growth with a galvano-cautery écraseur, employing a steel piano wire instead of the usual one of platinum.

The growth was attached to the ethmoid and its base was thoroughly cauterized. There was no return seventeen months later. He closed with the report of seven other cases which he had collected.

DR. COOMES, of Louisville, Ky., related a case of fibro-myxoma of the nose, which recovered after removal of the growth.

DR. E. FLETCHER INGALLS, of Chicago, Ill., reported two cases in which there had been an extension of the growth into the pharynx. He believed that cocaine did not always sufficiently prevent pain and that frequently hemorrhage followed its use.

DR. CHARLES STOCKTON, of Buffalo, N. Y., favored the compound platinum and iridium wire.

DR. CASSELBERY had used a ten per cent., and even stronger solution of cocaine by means of the cotton applicator.

DR. J. O. ROE, of Rochester, N. Y., read a paper on

CHOREA LARYNGEALIS,

in which he described this affection and related four cases. A spasmodic cough in the first could only be relieved by hypodermatic injections, but in the end disappeared suddenly.

Internal medication and pneumogastric nerve galvanization was the treatment in another case. A third had nocturnal coughing spells.

MR. LENNOX BROWNE, of London, England, was not in accord with Dr. Roe in what he called chorea laryngis. He had seen choreic movements of the larynx without cough. He had seen several coughing cases and thought they were fairly common. One woman, he recalled, who always got this laryngeal cough during pregnancy, but which left her with the advent of quickening. In one case the cough was removed by the removal of an enlarged tonsil. A second case was cured by a sojourn at the seaside, but this treatment failed to relieve a second attack, though a sea voyage had the desired effect.

DR. ROE concluded by explaining that hysterical coughs were often enough caused by diseased nostrils, enlarged tonsils, and other causes apt to excite reflex disturbances. Of course, such cases were not choreic. The distinctive difference between a nervous or reflex laryngeal cough and one due to chorea was in the presence of choreiform twitchings of the laryngeal muscles as seen by laryngoscopical examination. The cough is not diagnostic. Chorea laryngis can only be positively diagnosticated with the laryngoscope.

DR. F. M. COOMES, of Louisville, Ky., read a paper on

THE DELETERIOUS EFFECTS OF TOBACCO ON THE THROAT AND NOSE.

For years he had observed the effects of tobacco upon consumers. In his experience smoking caused more harm than chewing. Snuff chewing is almost wholly confined to women, especially those of a certain class. Tobacco has a bad local effect. Chronic pharyngitis is the commonest result, and is due to both chewing and smoking. Many ministers' sore throats are tobacco throats. He related illustrative cases. Smoking causes great injury to the air passages. The nasal mucous membrane of inhalers of tobacco smoke is generally hypertrophic. Smokers have probably worse throats than chewers, because they use an inferior kind of tobacco and keep the heated smoke in contact with the mucous membrane for a time. It has been said that all the irritation from the use of tobacco is not due to nicotine alone, but also to the burning of certain potassium salts formed in the tobacco. Crystals of potassium salts can even be detected upon the stems of the leaf after stripping, and from these many kinds of tobacco are largely manufactured. The noses and throats of fully ninety-five per cent. of tobacco chewers and smokers he ventured to say are more or less in a pathological state. He has seen many smokers with a swollen epiglottis and vocal cords, which he supposed were largely due to persistent coughing in the effort to bring up tenacious mucus.

DR. STOCKTON, of Buffalo, N. Y., considered this a very interesting subject, especially for laryngologists. Holland has the largest proportion of smokers and America of chewers. His experience showed that chewing is worse than smoking. If it is a fact that potassium salts act so badly on mucous membranes, why use them as was customary? He objected to the use of any of the potassium salts, especially upon the mucous membranes. The worst case of atrophic cataract he ever saw was caused by the use of these salts. Its effect is to tan the mucous membrane, and it is used in tanning hides. The nicotine cannot do much harm, as it is driven off by the heat. Cigarette smokers may get nicotine, but cigar and pipe smokers, as a rule, would not, as they do not inhale. He thought that chewers absorb more nicotine than smokers do.

MR. LENNOX BROWNE, of London, Eng., remarked that sailors lead pretty physiological lives because forced to do so, and the use of tobacco is diminishing among them. Tobacco certainly is highly deleterious. He used it himself and did not give it up because it afforded him a great deal of enjoyment. Chewing must certainly be worse than smoking. Sir Henry Thompson had said that cigarette smoking is the least harmful of the modes of using tobacco, especially if a new holder is often obtained. His tobacconist always supplies him with a new holder with each 100 cigarettes. He had noticed that snuff takers are more apt to have nasal polypi than any other class of persons.

CORRESPONDENCE.

THE ADVANTAGES OF THE PLASTER-OF-PARIS JACKET.

To the Editor of THE MEDICAL NEWS,

SIR: In your journal of the 3d instant I notice a quotation from an article by Dr. Bruns, of Jitomir, Russia, which appeared in the *London Medical Record* of July 15, 1887.

The gentleman seems to be under the impression that he has discovered something new in the use of water-glass for making spinal supports, in place of plaster-of-Paris; whereas it was done years ago, and then condemned, because the silicates are not porous, and so imprison the insensible perspiration which is continually taking place, whereas gypsum allows it to evaporate.

To prove the porosity of a plaster-of-Paris jacket, make a small one over a tumbler as a model, and then, after withdrawing the tumbler, cover the ends also with

plaster-of-Paris bandages, and make a hole in one end large enough to admit the stem of a lighted tobacco pipe. Now blow through the bowl of the pipe, and so fill the little box with smoke, which will soon be seen issuing from it in all directions.

This feature of porosity is one of the most important advantages which plaster-of-Paris possesses over the silicate jackets, and varnished leather, and shellac cloth, etc.; while in the manufacture of all of these there is required a solid mould to make which a plaster-of-Paris jacket is first constructed on the patient, and thus a great deal more time and trouble are required than in the original plan of my father, Professor Sayre.

One great advantage of the latter is also that the physician is rendered independent of the instrument-maker, a point of no small importance to a man living in the country, while the other methods above mentioned require usually the services of a skilled mechanic, or else a much greater amount of time than is at the disposal of a busy practitioner.

Dr. Bruns says that his water-glass jackets weigh "for a child of eight or ten about 3½ pounds," a fact much in favor of plaster-of-Paris, as those for a girl of eighteen or nineteen weigh but 2 to 2½ pounds, while for a child of eight I have made them as light as 1½ pounds.

As to the objection that plaster-of-Paris jackets "give rise to pressure sores, as well as (in pauper practice) to the appearance of numerous lice," I would say, that skill in the accurate adjustment of the jacket and attention to complaints of pain, will prevent the former, and as for the lice they will grow under a "water-glass" as well as under plaster-of-Paris if either be applied to a filthy body.

The point, however, which has caused me to write this letter is the fact that Dr. Bruns evidently does not understand the difference in treatment of Pott's disease and lateral curvature of the spine, as he says: "A serious drawback of Sayre's jacket is, it cannot be taken off at will." Now, if it is a case of Pott's disease in the acute stage, the quieter the bones can be kept the better, and the jacket should no more be removed daily than should the splints from a broken leg.

In the later stages of the disease it is well to split the jacket down the front, and fasten it together with hooks and lacings, so that it occasionally may be removed for bathing; while in lateral curvature the jacket is *always* cut open and *removed every night*, and while the patient is practising gymnastic exercises, which are as essential for the cure of this disease as rest is for the other. My father has taught me these principles for years.

Yours respectfully,

Reginald H. Sayre, M.D.

225 Fifth Avenue, N. Y., Sept. 14, 1887.

NEWS ITEMS.

Successful Laparotomy for Gunshot Wound of the Abdomen.—Dr. C. E. Case, of Tocoma, W. T., writes us that he has recently successfully performed laparotomy with antiseptic precautions in the case of a boy who was shot by a 32-calibre pistol, the ball entering two inches above and to the right of the umbilicus and passing out of the body three inches to the right of the spine. Considerable blood was found in the abdominal cavity. The boy is now convalescing.

Programme of the International Congress of Hygiene at Vienna.—This Congress will meet at Vienna, September 26, 1887, under the presidency of Archduke Rudolph and Professor Ludwig.

The addresses will be as follows:

Professor Brouardel on Typhoid Fever and its Propagation.

Professor Pettenkofer on the Relative Position of the Study of Hygiene in Medical Colleges and the Higher Schools of Technology.

Professor Corradi on Longevity from the Standpoints of History, Anthropology, and Hygiene. And

Professor Charles Théodore on the Most Important Changes in the Population of Europe in the Past Thousand Years.

Discussions will also be held on these and kindred topics.

The hospitality of Vienna and its suburbs has been extended to the Congress; and an excursion down the Danube to Buda-Pesth will be made.

The Government coöperates most actively in the work of the profession for the success of the Congress.

Death by Decapitation. — Regnard and Loye presented recently to the French Academy of Sciences the following results of their examination of the body of a decapitated criminal:

Two seconds after decapitation no sign of consciousness could be detected.

Corneal reflexes persisted six seconds after decapitation. Ventricular contractions were observed for twenty-five minutes; auricular contractions for one hour. Aside from ocular reflexes, contraction of the jaws, and spurting from the carotids, the impression was as if a cadaver had been decapitated.

This calm death, without agony, was evidently caused by inhibition, resembling that caused in animals by certain irritants to the nervous system.

The entrance of air beneath the arachnoid was a purely physical phenomenon caused by the escape of blood from the cranium.—*L' Union Médicale*, July 12, 1887.

The Children of the English Poor.—The attention of the House of Commons was recently called to the starved condition of poor children in English schools. The *British Medical Journal* estimates that eighty or ninety per cent. of these children are physically unfit for either study or exercise from starvation.

The House Secretary has announced his intention of issuing a circular prescribing that due precaution be taken to avoid excess in the legal punishment of young children. The occasion for this action was the recent flogging by a policeman of a boy, aged seven years, for theft. When brought to a surgeon he had fifty wounds from the lash, and was in a condition of severe prostration.

The Foods best Digested with Tea and Coffee. —In the *Journal of Anatomy and Physiology*, Dr. J. W. Fraser reports the results of his experiments on the action of tea, coffee, and cocoa, on stomach and intestinal

digestion. He summarizes his views by the following recommendations and deductions: 1. That it is better not to eat much albuminoid food-stuffs at the same time as infused beverages are taken; for it has been shown that their digestion will in most cases be retarded, though there are possibly exceptions. Absorption may be rendered more rapid, but there is a loss of nutritive substance. On the other hand, the digestion of starchy food appears to be assisted by tea and coffee; and gluten, the albuminoid of flour, has been seen to be the principle least retarded in digestion by tea, and it only comes third with cocoa, while coffee has apparently a much greater retarding action on it. From this it appears that bread is the natural accompaniment of tea and cocoa when used as the beverages at a meal. Perhaps the action of coffee is the reason why, in this country, it is usually drank alone or at breakfast—a meal which consists much of meat, and of meats (egg and salt meats) which are not much retarded in digestion by coffee. 2. That eggs are the best form of animal food to be taken along with infused beverages, and that apparently they are best lightly boiled if tea, hard boiled if coffee or cocoa, is the beverage. 3. That the casein of the milk and cream taken with the beverages is, probably, absorbed in a large degree from the stomach, and that the butter used with bread undergoes digestion more slowly in the presence of tea, but more quickly in the presence of coffee or cocoa; that is, if the fats of butter are influenced in a way similar to oleine. 4. That the use of coffee or cocoa as excipients for cod-liver oil, etc., appears not only to depend on their pronounced tastes, but also on their action in assisting the digestion of fats. —*Science*, July 15, 1887.

DISINFECTANT CANDLES.—Perhaps the most elegant method of disinfection hitherto suggested is that which we owe to the ingenuity of Mr. George Browne, F.C.S., who has taken advantage of candle combustion to free, in a vaporous state iodine and phenol, by the decomposition of iodo-salicylic acid. Iodo-salicylic acid is quite as effective in its destructive properties on the lower forms of life as iodoform, while it has not its disagreeable odor. We have tried them in water closets with admirable effect, the air of a rather confined closet being kept quite free from all unpleasant odors by burning one of these candles at intervals during the day in it. Also, it removes the smell of tobacco smoke from a room which has been impregnated with it. The presence of iodine in the air can be demonstrated by a little starch paste, a pretty experiment being to hold a globe rinsed with a weak solution of starch paste over the flame of the candle, when fluorescent particles of the iodide of starch will be deposited.—*Provincial Medical Journal*, August 1, 1887.

THE MODERN PHYSILIAN.—ROBERT LOUIS STEVENSON, in the preface to *Un lorgneds*, pays the following tribute to the medical profession:

"There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not unfrequently, the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of men is done with, and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he had, such as is possible to those who practise an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and, what is more important, Heraclean cheerfulness and courage. So it is that he brings air and cheer into the sick-room, and often enough, though not so often as he wishes, brings healing."

SOLUBILITY OF PILL COATINGS.—The relative solubility of pill coatings has been experimented on by Dr. Thompson, and by him reported in the *Chemist and Druggist* to be as follows, the most soluble being first named: Gelatine, sugar, talc venet., balsam of tolu.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM SEPTEMBER 13 TO SEPTEMBER 19, 1887.

CABELL, JULIAN M., *First Lieutenant and Assistant Surgeon.*—Relieved from duty in connection with the annual Department Rifle Competition at Bellevue Rifle Range, Nebraska; ordered for duty as Medical Officer at the "Rifle Camp for Team of Distinguished Marksmen," Bellevue Rifle Range.—*S. O. 89, Department of the Platte*, September 10, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 17, 1887.

ASHBRIDGE, RICHARD, *Passed Assistant Surgeon.*—Detached from the "Constellation," and ordered to the Naval Academy, Annapolis, Maryland.

AYERS, JOSEPH G., *Surgeon.*—Detached from Torpedo Station, and wait orders.

WISE, JOHN C., *Surgeon.*—Ordered to relieve Surgeon Ayers, at Torpedo Station.

COWEN, SAMUEL T., *Medical Director.*—Detached from the Hospital, Chelsea, Massachusetts, and placed on Retired List, September 17th.

BRADLEY, GEORGE P., *Surgeon.*—Leave of absence extended six months, with permission to remain abroad.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING SEPTEMBER 17, 1887.

HUTTON, W. H. H., *Surgeon.*—Granted leave of absence for thirty days, September 15, 1887.

PERKIANCE, GEORGE, *Surgeon.*—Granted leave of absence for thirty days, September 13, 1887.

ARMSTRONG, N. T., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, September 13, 1887.

GLENNAN, A. H., *Passed Assistant Surgeon.*—To proceed to Charleston, South Carolina, for temporary duty, September 15, 1887.

WHITE, J. H., *Assistant Surgeon.*—Granted leave of absence for twenty-seven days, September 13, 1887.

NORMAN, SEATON, *Assistant Surgeon.*—Granted leave of absence for twenty days, September 16, 1887.

HEATH, F. C., *Assistant Surgeon.*—To proceed to Mobile, Alabama, for temporary duty, September 15, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

RECENT ADVANCES IN THE TREATMENT OF PULMONARY CONSUMPTION.[1]

BY SOLOMON SOLIS COHEN, A.M., M.D.,

LATELY CHIEF OF THE MEDICAL CLINIC, JEFFERSON MEDICAL COLLEGE HOSPITAL, PHILADELPHIA.

WHETHER our efforts be directed toward cure—that is, toward putting our patients in a condition that permits them to recover; or whether we aim at the prevention, which is better than cure; excluding from consideration measures purely palliative, the objective therapeutic point may be summed up in one word—Nutrition. Of those methods intended to promote nutrition, first in importance comes the subject of superalimentation; to which the prominent attention it deserves was directed by Debove's communications upon forced feeding, or gavage, in 1881 and 1882.

Debove being convinced that many consumptive patients, despite loss of appetite, maintained comparatively good powers of digestion and assimilation, determined to resort to mechanical feeding. He therefore passed into the stomach, through the mouth, a flexible rubber tube connected with a funnel (such a tube as had been employed for lavage—washing the stomach—and the method of introducing which will be described in the latter connection); and by this means introduced much larger quantities of food than the patients would voluntarily swallow. The taste of the aliment thus administered becomes a matter of no consequence, and we are, therefore, able to select that which will give the most nutriment in the smallest bulk. Meat powders were adopted as the basis of Debove's nutritive mixtures; but milk, eggs, soups, and farinaceous powders may be used, either separately or in conjunction therewith. When necessary, pepsin, pancreatin, hydrochloric acid, etc., may be added, or peptonized aliments be employed. A mixture that was used with advantage by Dr. Stern, of Philadelphia, and myself, in the cases of two patients treated at the Philadelphia Polyclinic, consists of a quart of milk, two tablespoonfuls of beef powder, three eggs, fifteen grains of scale pepsin, and thirty drops of dilute hydrochloric acid, warmed, and administered twice a day; the patient eating what he wished in the interval. In hospital service, forced feeding is practised three times daily, but in private practice, we must be content with what is possible.

Meat powders may be purchased in the shops, or can be prepared at home by cutting boiled meat into little pieces, drying thoroughly by means of a water bath, and grinding in a coffee mill. Powder so prepared is said by Dujardin-Beaumetz to answer its purpose very well. The farinaceous powders used in France are prepared from cooked lentils, malted lentils, and maize. I have no personal experience with them, but they are said to be highly nutritious. About seven ounces of the alimentary powder, whether meat or farina, or both, are mixed with a quart of milk or water, or milk and water; the milk being added slowly to form a paste, which afterward dissolves readily in the additional liquid. When the long tube of Debove cannot be passed, or when patients will not allow it to be passed, it often suffices simply to pass the entrance of the œsophagus with a shorter tube, as recommended by Stoerk; or to make use of the special apparatus of Dujardin-Beaumetz or Bryson Delavan, which consists of a glass jar with two tubes; one of which, above the level of the fluid, communicates with a hand-bulb for supplying compressed air, the other, below the level of the fluid, communicating with a short œsophageal sound of small calibre; an ordinary rubber catheter will answer at a pinch. When the bulb is compressed, the fluid food is driven over. Efforts of swallowing on the part of the patient will facilitate the process.

From the reports made by reliable observers in France and elsewhere, as well as from a few cases under my personal observation, I feel no hesitancy in affirming that remarkable gains in weight may be obtained from forced feeding, and that very often there will be concomitant recession in febrile and other phthisical phenomena. Improvement in physical condition of the lungs has been reported, but I have never succeeded in keeping a patient under the treatment long enough to verify this by personal observation. American patients in private or dispensary practice are not as tractable as foreign ones, in these matters, and I have had no opportunity of conducting the treatment of phthisis in hospital inwards. To secure the benefits of superalimentation with the great run of patients, I have had to employ alimentary mixtures similar to those of the gavage process, by natural methods. The general dietary advised is a largely nitrogenous one, of which beef, raw or rare, broiled or roast, forms the principal item; there being added sufficient milk, eggs, fish, lamb, mutton, poultry, leguminous vegetables, and greens; fruits in season, large quantities of butter, with small quantities of bread, potatoes, and starchy foods in general. Alcohol is employed as a food when it is necessary to obtain force with the least expenditure of digestive energy.

Fried foods of all kinds, pastry and other indigestible matters, are of course prohibited. Patients are advised not to allow more than three hours to pass without taking food, except during sleep; to drink a glassful of cream or milk, or cream punch,

[1] Read before the Medical Society of the State of Pennsylvania, June 30, 1887.

milk [one h, or egg nog, just before going to bed, and to have milk at hand to drink in case of waking during the night or early morning. Not more than three set meals daily are advised, but in the intervals milk, with or without alcohol, chicken soup, bouillon, rich broths, etc., are administered; as a vehicle usually, for the beef-peptonoids of a well-known firm of American manufacturing chemists. Of this preparation it is endeavored to give not less than two ounces daily, and the amount may be increased as circumstances require. Various preparations of meat-juice purchased in the shops, or prepared at home, may be used in the same manner, according to indications. The aim of the treatment is to supply enough nutriment not alone to counterbalance current waste, but to make up previous excess of waste over repair, and the details must be elaborated in each case with regard to individual condition. Cod-liver oil, we well know, is an advantageous addition to the dietary in some cases, but not so many as we have supposed. At least it is not indispensable. Oleaginous inunctions are often of considerable benefit.

When overfeeding by natural methods fails, or when the patient is unwilling or unable to swallow the necessary quantity and quality of food, resort should be had without hesitation to the œsophageal tube and forced feeding.

But having supplied the proper kind and amount of aliment, we must place our patient in a condition to digest and assimilate it. It is true, as already suggested, that we may make use in certain measure of predigested foods, and that we may assist digestion in other instances by the administration of the digestive ferments; but our endeavors must not cease there.

The problem before us naturally divides itself into three parts: First, the preparation of the digestive tract, to elaborate and to absorb the chylous fluids—primary assimilation. Second, the promotion of the complex process of the breaking down and displacement of imperfect tissues and effete products, and replacement by new and vigorous tissues, with evolution of forces required in the economy; *i. e.*, metabolism—secondary assimilation; and third, the promotion of the excretion of waste products.

The first desideratum is endeavored to be secured by methods which cleanse, disinfect, and stimulate the digestive canal; varied in detail according to circumstances. When we have reason to suppose, for example, that a sluggish gastric catarrh interferes with digestion, washing out the stomach may be practised with good effect. The procedure is quite simple. A stomach-tube of similar material to French catheter tubing, about 28 inches long, and from $\frac{1}{2}$ inch to $\frac{7}{8}$ of an inch in diameter, is attached by a short section of glass tubing, to a soft rubber tube about one yard long, in the extremity of which is inserted a hard rubber funnel of about six-ounce capacity. The stomach-tube having been dipped into warm water or warm milk, is introduced into the œsophagus and propelled by successive pushes, or swallowed by the patient; and the funnel being sufficiently elevated, from a pint to a quart or more of warm water (100 F.), in which is dissolved a drachm or two of borax, table salt, or baking soda, is slowly poured into the funnel. As the last of the fluid is passing out of the funnel, the latter is rapidly inverted over a receptacle on the floor, and the contents of the stomach are thus siphoned out. The manœuvre is repeated until the returned water is clear. This process, called lavage, which, as already stated, suggested gavage, and is practised in much the same manner, leaves the gastric mucous membrane in excellent condition for digestion and absorption. It may be immediately followed by gavage, as recommended by Dujardin-Beaumetz. The drinking of half a pint to a pint of hot water, half an hour to an hour before meal time, will sometimes accomplish much the same purpose, and is, of course, less troublesome.

When a condition of septic fermentation is believed to interfere with digestion, a suitable antiseptic agent, such as carbon-disulphide water or solution of hydrogen dioxide, may be introduced into the lavage solution, and a portion allowed to remain a few minutes in the stomach; or creasote, carbolic acid, iodoform, the solutions mentioned, or other agents may be administered in the ordinary way. When the intestinal canal is believed to be the seat of the trouble, we may attempt to wash it, indirectly, by lavage, or by potations of hot water, or to medicate it with creasote, bismuth, sulphocarbolates, mercurials, iodoform, sulphides, naphthalin, or other appropriate drugs. I have reason to believe from the effect produced upon some cases of phthisis attended with diarrhœa, that the injection per rectum, of hydrogen sulphide, directly or indirectly arrests septic fermentations in the small intestine.

To aid digestion, stimulate digestive secretion, and promote absorption, in addition to the measures already referred to, preparations of malt, Hoffmann's anodyne, bitter tonics, nux vomica, arsenic, preferably Fowler's solution, iron, nitro-hydrochloric, nitric, and phosphoric acids, trinitrin, and other appropriate medication may be employed when indicated.

Nutriment being administered, digested, and absorbed into the blood, must be converted into vital forces, and into tissue. Exercise and respiration are the natural means to effect this. "Respiration," said Arbuthnot, "is the second digestion."

When the patient is able to carry out the instructions, and when there is a sufficiency of unimpaired lung tissue, respiratory gymnastics, and voluntary forced respiration may suffice. Ordinarily, however, these measures will not be efficient, and must be replaced or supplemented by a method which affords mechanical assistance to respiration, independent of voluntary exertion. This method offers itself in the inhalation of compressed air, a subject which will always be associated with the name of its great promotor, Waldenburg. The air is inspired under an excess pressure, gradually increased from $\frac{1}{50}$–$\frac{1}{40}$ up to $\frac{1}{10}$ or $\frac{1}{8}$ of an atmosphere. Expiration is ordinarily made into the atmosphere; sometimes into rarefied air. The inhalations are administered once or twice daily. At each period, ten or fifteen, twenty-five or thirty, up to one hundred or more

respiratory acts are completed in five to fifteen minutes, and the process is repeated after an interval of about ten mtinutes.

The value of this procedure as an aid to nutrition, formed the theme of a paper I read before the Pennsylvania State Medical Society last summer, and needs not now to be elaborated. Let me, however, briefly recapitulate the principal points. The inhalation of compressed air dilating the air-cells as it does, by gentle and equable pressure, aids nutrition by securing the proper exposure of venous blood to the atmosphere, facilitating the disengagement of carbon dioxide and the taking up of oxygen to be carried by the hæmoglobin to the tissues, and assist in force-production and tissue-building. The mechanism by which this is accomplished is complex. The air passages are cleansed from decomposing products of secretion and desquamation, and the alveoli are reopened in unused, blocked, and partially consolidated areas of pulmonary tissue, thus securing efficient pulmonary ventilation. Increase of partial pressure, favors dissociation of carbon dioxide and association of oxygen in the pulmonary capillaries. Direct pressure and pressure differentiation tend to promote the relief of congestion in the lungs, the absorption of inflammatory congeries of new cells, and the stimulation of both intra-pulmonary and peripheral circulation. Increase of blood pressure, further, stimulates the production of lymph. Thus is secured not alone the exposure by increased volume and rapidity of pulmonary circulation, of a greater number of corpuscular oxygen carriers to the increased volume and weight of inspired oxygen, under the conditions most favorable to oxidation of hæmoglobin, but also the penetration of the corpuscles with their vitalizing burden in the nutrient lymph-stream, further into the tissues. This latter effect may theoretically be heightened, by a measure advocated by Prof. Bartholow in simple anæmia, with sluggish peripheral circulation; namely dilatation of the terminal vessels by means of trinitrin (nitroglycerin). I have as yet no available experience with nitroglycerin in phthisis.

One circumstance which had long militated against the popularization among the profession of pneumatic treatment, was the cost and cumbersome clumsiness of the necessary apparatus. In 1883, with the assistance of Mr. Charles Richardson, of the house of Queen & Co., Philadelphia, I succeeded in largely obviating these objections by means of an apparatus, which can not only be employed in the physician's office, but may be entrusted to the management of the patient or his friends at home, and is comparatively inexpensive. It is fully as efficient as the apparatus of Waldenburg upon which it is modelled, and like its original, is superior to a certain widely advertised and extravagantly costly patented instrument, devised in 1885. It consists simply of a small gasometer and a foot-bellows. The inner cylinder is weighted at the bottom, in order to throw the centre of gravity as low as possible, and preserve its steadiness without pulley or flanges. Air is pumped in by means of the foot-bellows, the supply valve of the latter being connected with a rubber tube of large aperture, which is placed out of the window, to secure pure, fresh air. Without additional weighting the inner cylinder gives a pressure of $\frac{1}{70}$ of an atmosphere. By placing additional weights on top, the pressure may be increased to any desired amount up to one-fortieth of an atmosphere. The supply of air is continuous, and the patient may inhale directly from the apparatus, or the stream of inspired air may be made to pass through a Wolff bottle containing terebene or other volatile medicament.

The mouth and nose are covered with a mask to exclude atmospheric air, and the ingress and egress of respired air are regulated by a stopcock. For detailed information as to the use of compressed and rarefied air, time requires me to refer to my previous communications, or to the text-books on inhalation.

To the administration of compressed air inhalations, twice a day, is to be added, when possible, due exercise in the open air; and when this is not advisable or possible, passive exercise by massage, frictions, and similar measures. Three hours after meals, during the culmination of digestion and the activity of absorption is the preferable time for open-air exercise. In the presence of active febrile processes, both active and passive exercise are to be moderated or even interdicted. Compressed-air inhalations, however, need not be abandoned. Inhalations of nitrogen have been recommended to abate fever. I have not tried the measure.

Digestion, absorption, assimilation, metabolism being assisted, it remains to promote excretion of waste, in order to rid the system of the now well-recognized danger of auto-intoxication by leucomaines, ptomaines, etc., and to make room for reconstructive materials. Stimulation of the emunctories by diuretics, cholagogues, cathartics, even diaphoretics are here indicated; but drugs should be avoided as far as possible, and when absolutely indicated, only the mildest remedies are to be chosen, these being promptly discontinued when the desired effect has been produced.

Our general tonic medication, exercise, forced respiration, etc., will of course, assist directly, and indirectly, as emunctorial stimulants. The daily sponge bath, which, to the well, is a matter of comfort and cleanliness, becomes to the consumptive a measure of therapeusis. The drinking of water, preferably hot, is again applicable as the best of diuretics and a potent diaphoretic. Lemon juice and sugar may be added to render it more palatable, the former indeed, increasing its value as a diuretic. Nitro-hydrochloric acid is among the best hepatic stimulants in this connection. An enema is ordinarily the best method of emptying the bowels. To overcome intestinal torpor the same measures employed under other circumstances, nux vomica, belladonna, faradism, etc., may be resorted to. Among the preferable cholagogue cathartics, are podophyllin and rhubarb.

The indications thus far considered may be fulfilled in the generality of cases by the following routine:

1. An abundant and proper diet, as already discussed; gavage if necessary.

2. The drinking of hot water, or hot lemonade; lavage, if necessary.

3. Moderate open-air exercise; respiratory gymnastics; daily inhalations of compressed air.

4. The administration of some such pill as this, three or four times a day: Iodoform, 1 to 2 grains, creasote or other, minim to one minim; to which may sometimes be added: reduced iron, 1 grain, or arsenious acid, $\frac{1}{60}$th to $\frac{1}{30}$th grain, the pill being made up with glycerine, crude petroleum, or extract of liquorice, with the addition, if indicated, of some bitter extract, such as gentian, cinchona, or nux vomica, and dispensed in capsule. Among other useful prescriptions may be cited, when iron is indicated: Compound syrup of phosphate of iron (Parrish); tincture of chloride of iron, dilute phosphoric acid, and Churchill's syrup of hypophosphites (J. Solis Cohen); the official syrup of hypophosphites and iron, etc. Iron seems to be better borne by the stomach, and to be more readily appropriated by the red blood-globules when inhalation of compressed air is practised. I have noticed this even in non-phthisical anæmia. Cardiac weakness, excessive febrile action, and other conditions may call for appropriate medication.

Although the ordinary administration of drugs is beyond the limits proposed to be discussed in this paper, it may be interpolated, while upon the subject of internal medication, that great improvement is, in many cases, apparently due to the use of iodoform, both singly and in combination, in doses ranging from one to five grains three times daily. Gains in weight are often very gratifying, when sufficient food is furnished. Thus I recall a patient under my care in the medical clinic of Jefferson College Hospital, who, although far gone in the disease, and, doubtless, beyond the possibility of permanent restoration, gained eleven pounds in one month while taking a pill of iodoform, two grains, three times a day, and drinking from one to two quarts of milk daily, with the addition of beef peptonoids.

Crude petroleum, like creasote and tar products in general, seems to have a favorable influence upon cough and expectorations. The good effects of iron and arsenic in anæmia and malnutrition generally are well known. Their action in phthisis needs no other explanation. It is due primarily, I believe, to direct influence upon digestion; secondarily, to general stimulation of constructive metamorphosis.

Thus far we have considered, in the main, measures directed to the general system. To the inhalation of compressed air, a measure designed in part mechanically to counteract local pathological conditions, and to the administration of iodoform and creasote, drugs devoted in part to the restriction of morbid histological action, we may add some of the newer devices immediately directed against the local morbid processes, in part or in whole.

First, in this division of our theme, is the subject of medicinal inhalations. This might well be made the subject of an elaborate paper. Time permits but a hasty indication of its value. The general profession has been unaccountably slow to realize the advantage of a method which permits of direct medication of the respiratory tract in greater or less extent. This hesitation may have been produced by the extravagant claims of some unbalanced observers. I will try to avoid that error, but I cannot help speaking with enthusiasm. There are certain volatile medicaments long known to exert favorable influence upon pulmonary diseases, although the method by which they operate is a matter of dispute. From a purely empirical standpoint, then, I will enumerate, in the order of merit, those that appear to me to be the most generally useful. These are, creasote, ethyl iodide, terebene, spirits turpentine, tincture benzoin, spirits thymol, and spirits chloroform. Eucalyptol is often useful, but, in the main, has disappointed me. Whatever the reason may be that the atmosphere of pine woods benefits those suffering with chest troubles, is the reason that terebinthinate inhalations at home have sometimes an almost equally good effect; especially so, it seems, if combined with oxygen. Ethyl iodide, besides some specific effect of its own, offers a ready means of local and general iodization without disturbing the stomach; to preserve it, it should be mixed with alcohol, and dispensed in a dark bottle.

In chronic processes, creasote, terebene, and ethyl iodide are employed for general good effect. To control subacute epiphenomena, terebene and ethyl iodide are most frequently resorted to. Benzoin is preferable for acute catarrhal processes. Thymol is sometimes substituted for creasote when the odor is a source of complaint. Chloroform finds indications as a sedative to troublesome cough, and as a mitigant of the sharpness of some specimens of terebene. Burroughs and Welcome's terebene is to be preferred for internal use, but the commercial terebene (Merck's) seems better for inhalation, and very often requires the admixture of chloroform or spirits of chloroform. These agents may be inhaled from a wide-mouthed vial, but preferably from the sponge attached to the little perforated zinc respirator, devised by Dr. Barney Yeo, of London, which may be worn almost continuously, with very little inconvenience, thus keeping up a desirable effect. Many patients wear the respirator during sleep, and are perfectly comfortable. Fifteen or twenty drops of a mixture consisting, for example, of equal parts of creasote, terebene or ethyl iodide, and spirits of chloroform or alcohol, may be dropped on the sponge, and renewed two or three times a day. One of the volatile substances enumerated may be floated on the surface of water in a Wolff bottle, connected with the compressed-air apparatus, or with a reservoir of oxygen. Terebene is the one usually chosen for this purpose. Vaporous sprays of various antiseptic, stimulant, or sedative solutions may be administered by means of the Oliver or globe atomizer, or one of the many contrivances depending upon the same principle—a combination, that is, of the Bergson and Sales-Giron methods of nebulization, giving a very fine mist which apparently penetrates the air passages for some distance. Messrs. Codman and Shurtleff have, at the suggestion of Dr. J. Solis Cohen and myself, arranged a neat combination of the Oliver atomizer with the stopcock of a compressed-air apparatus. Should this device stand the test of experience, I will describe it in a future paper. Hydrogen dioxide

suggests itself as a valuable drug for use in this manner.

Acting upon a recommendation of Prof. Bartholow's, I am making some observations on the inhalation of sulphurous acid gas, an old remedy, by a new method. It has been found that carbon dioxide and sulphur dioxide, both extremely rebellious gases when attempt is made to liquefy them separately, may, by a comparatively slight pressure, be together brought into a liquid form and confined in an ordinary mineral water siphon bottle. On releasing the pressure, they immediately return to the gaseous state, and the air of an apartment may thus be readily charged with any desired quantity. The diffusion and probably the mixture with carbonic acid, robs the sulphurous acid, to some extent, of the suffocating properties it exhibits when inhaled undiluted. The dose is to be regulated in each case by the individual capacity to breathe the sulphurous atmosphere—which varies greatly—and the patient is to pass as much time as may be practicable in the medicated apartment.

Sufficient time has not elapsed since I have been able to obtain the liquid referred to, to venture a positive expression of opinion from my individual experience. I believe that it will prove to be a valuable addition to our resources. This leads, naturally, to the subject of gaseous injections of carbonic acid and hydrogen sulphide. At the time that I had announced the sub-titles of this paper, the Bergeon method of treating phthisis was a novelty in this country; but as the members of this Society are now beyond doubt thoroughly familiar with it, instead of describing the process in full, I shall simply give a few practical points, the result of personal experience: First, as to the method of preparing and using the gases, and, secondly, as to what may and what may not be expected of it.

The intelligent physician will "prove all things and hold fast to that which is good;" even though imperfect experience may decry as utterly useless that for which unbalanced enthusiasm had claimed too much. He will not hold scientific investigators responsible for the vagaries of irresponsible newspaper reporters, nor reject that which palliates, because it does not infallibly cure. In the first place, we must remember that the effect of the Bergeon injections is produced by the elimination of the hydrogen sulphide (or other active agent) through the air tract. Unless we obtain evidence of this elimination by recognition of the odor in the expired air, or the blackening of test paper of plumbic acetate (in case H_2S be employed) by the breath, we are not securing the proper effects, and cannot expect improvement. Failing to secure this evidence in many cases, with most of the natural waters used, I have been well satisfied by the use of the solution recommended by Yeo after Bardet, which is prepared by adding to eight ounces of water three drachms each of the following solutions:

No. 1.—Sodium sulphide (c. p.)	℥ss.
Distilled water	f℥vj.—M.
No. 2.—Tartaric acid	ʒj ʒij
Salicylic acid	ʒss.
Distilled water	f℥vj.—M.

Secondly, to avoid colic and griping pains we must be sure no air remains in bag, bottles, tubes, or any part of the apparatus, and must warm the injected gases.

Thirdly, twenty minutes to half an hour must be consumed in the process. From four to six quarts of carbon dioxide should be used at each injection, after the first few to establish tolerance. The patient should remain recumbent for half an hour after the cessation of the injection.

Fourthly, the best times for injections are just before breakfast, and just before going to bed—*i. e.*, three hours after supper.

Fifthly, patience and perseverance are necessary, both on the part of patient and physician.

Sixthly, tartaric acid is more easily carried and more neatly handled than sulphuric acid, and will disengage carbonic acid from sodium bicarbonate as quickly. About two parts by measure of tartaric acid to three of sodium bicarbonate is a good working rule.

This method of treatment is not designed to destroy the bacillus tuberculosis, but to remedy those local conditions, mainly suppurative, which permit this microbe to find a suitable habitat in the lungs. A significant fact lately reported, and, if verified, of vast scientific importance in correcting current errors as to etiology, is that the sputum of patients thus treated, fails to produce tuberculosis in animals.

The effects of the treatment, as I have seen them in many, but not in all cases, are more or less rapid reduction in temperature, diminution of cough, improvement in the character of expectorated matters, promotion of sleep, increase of appetite, cessation of night-sweats. These palliative results, great in themselves, are still greater in the removal of obstacles to nutrition. The physical signs attributable to collateral catarrh and suppurative processes subside. I have seen no cure, but then there has not been time either to permit recovery or to test its reality. I have not noticed any marked recession in physical signs in the lung due to the tuberculous process itself; but in two cases, patients of Dr. J. Solis-Cohen's, I have seen cicatrization of laryngeal ulcerations apparently tuberculous, with subsidence of pyriform tumefactions. This is a rare occurrence, even with assiduous local treatment, and in these instances local treatment was not instituted. In no case, however, have we abandoned superalimentation, or refrained from medication when it seemed to be indicated. I regard the Bergeon process as a good adjuvant to other treatment, but until I have larger and longer experience therewith, I should hesitate to place sole dependence upon it. To establish its proper value we must employ it in all cases, and find out in what group it seems to be most useful. I should say from my own experience, and from what I learn from my friends in Philadelphia, that the cases in which it appears to be most efficacious are neither those where the lung is hopelessly broken down, and it is powerless; nor those in which softening has not begun, and it is unnecessary; but those in which septicæmic processes, due to pulmonary suppuration, are a source of danger and a cause of depression; yet in which there is still a

hope of prolonging life if the suppurative process can be controlled. When this has been accomplished, I should then feel disposed to resort to inhalations of compressed air. The latter are, indeed, the one great dependence in cases of early phthisis, and were I compelled to choose between compressed-air inhalations and all the drugs of the pharmacopœia, I should unhesitatingly prefer the former. I know that I have seen consumption cured by its means. I have seen cases, in the practice of my brother, that have remained well for ten years, and know of some still living that have survived the predicted time of death even longer; and I am happy to say in conclusion that the patients of my own, whose cases I reported to this Society last year, are still alive, and to all appearances perfectly well. The treatment adopted in these cases and carried out at home—obviating the expensive and often futile quest after a health-restoring climate—was superalimentation, compressed air, ethyl iodide and terebene inhalations, iodoform, creasote, and iron internally; measures directed not against a microbe, which is the evidence of disease, but against the malnutrition, which is its cause.

GLIOMATOUS HYPERTROPHY OF THE PONS.[1]

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Gliomata of the pons are rare, and but few cases of them are to be found in medical literature.[2] Therefore it seems to me to be desirable that the following case, which is a beautiful example of such a tumor, should be published.

Case.—*Steadily increasing incoördination of movements, bulbar paralysis, and general motor paresis. Glio-sarcoma of the pons Varolii.*

April 17, 1886. C. L., female, æt. six. The father of the patient died a little more than a year after she was born, with symptoms of melancholia and dementia. An autopsy was held, of which I can obtain no account except from his widow, who says that there was found "water on the brain and tumor of the brain." There have been many cases of nervous disease in the family of the father, but none in that of the mother. Patient has had a number of attacks of spasmodic croup, and three years ago had measles. For a number of years her left leg has become tired easily, and for some time she wore a rubber strap on her left foot, which showed a tendency to turn in. Otherwise she has been in excellent health till two months ago, when she had an attack of croup followed by a cough. Every time that she coughed she felt a severe pain in the top of her head, and felt a pain in her head at no other time. About three weeks ago she began to walk badly, and seemed to have trouble in balancing herself when standing. Her mind is clear, her memory is good, and she is not in any way nervous. She has an excessive appetite, and has vomited a little at times.

She is a well nourished, intelligent girl, but has a vacant expression. Her speech is drawling. She keeps her mouth open most of the time, drools when eating, and has some difficulty in swallowing. Her head is drawn toward the right shoulder most of the time, especially when she makes any exertion. She stands with her feet wide apart, and is careful not to lose her balance. When she walks her right leg seems more rigid than her left; so that she takes freer and longer steps with her left leg, and consequently in walking she tends to walk in a circle, turning always toward the right. Her walk resembles that of a drunken person; being very unsteady, swaying, and pitching, as if every moment she were about to fall. Her legs and arms are rather weak, and the movements of her arms, especially of the right, are very awkward, but she holds them in no fixed position. There is no disturbance of sensibility in any part of the face, body, or extremities, and she recognizes objects placed in her hand when her eyes are shut. Plantar reflexes normal, no ankle clonus, knee-jerk exaggerated, especially on the right side. On ophthalmoscopic examination well-marked optic neuritis is found in both eyes. Urine contains neither albumen nor sugar.

May 21. She has slowly but steadily failed. Her legs and arms are now not only awkward, but also very weak. Her legs bend under her when she bears any weight on them, and she can neither walk nor stand. In addition to the weakness of the legs, there is a trace of spasm about them, but no ankle clonus can be obtained. Tactile, painful, and thermic sensibility is normal in all parts of the body. She is dull, but her intelligence seems intact, and she shows little if any loss of memory. Her articulation is indistinct, deglutition is difficult, uvula is raised very sluggishly, though equally on both sides, and the movements of the tongue are sluggish, although it is protruded without deviation. She still drools much, especially while eating and at night. Pulse is small, and varies from 120 to 140. At times when she is asleep her respiration is very rapid and panting, but it is rather slow when she is awake. When asleep her eyelids are partly open, and the eyeballs are turned outward, but when she is awake the eyeballs, at times, turn slightly inward, so that she squints, although no paralysis of any of the ocular muscles can be detected. Up to this time she has been taking pot. iodid. grs. 20 and pot. bromid. grs. 15 t. i. d., without any good effect. This was stopped to-day, and a pill containing phosphorus gr. $\frac{1}{64}$, ferri carb. gr. 1, quin. sulph. 1, and ext. nuc. vomic. gr. $\frac{1}{2}$, was given t. i. d.

June 4. She has been decidedly better lately. Her articulation and deglutition have improved slightly. She is brighter and can sit up without assistance, but cannot walk. The day before yesterday a well-marked ankle clonus could be obtained in both feet during the whole day, which has not been present either before or since. She complains of no headache, except the pain in the vertex when she coughs.

June 13. During the past week she has steadily and rapidly failed. On some days the left arm and leg have appeared completely paralyzed, while on other days she would move them a very little. She has been able neither to talk, walk, stand, nor even to hold her head up, which falls backward, forward, or to either side, according to the position in which she is held. Her hearing and cutaneous sensibility have remained unaffected, and her sight is but very slightly impaired. Lately she has given indications of having pain in the occipital region, and there has been a decided increase in the size of her head during the past week or ten days. She has had no convulsions. Her pulse has been small and feeble. This morning her respiration was stertorous for a few hours, and then became normal again. Her intelligence seemed clear until the very moment of her death, which took place quietly and suddenly this evening.

Autopsy, held twenty-four hours after death; head only examined. Bones of skull rather thin. Dura mater only slightly adherent to skull-cap. Increased

[1] Read before the American Neurological Association, July, 1886.

[2] Neurolog. Centralbl., 1883, p. 5.

amount of subarachnoid fluid. Cerebral convolutions flattened, and cerebral substance very œdematous. Corpus callosum is pressed upward and is very soft and thin, and almost broken through. Great and uniform dilatation of both lateral ventricles, which are filled with fluid of normal appearance. No dilatation of the third and fourth ventricles. Cerebellum normal. The pons Varolii, as seen both from the base of the brain and from the fourth ventricle, is greatly enlarged; being three or four times the normal size. On section the whole pons is found to be replaced by a tumor, apparently a glioma, which preserves wonderfully the normal appearance of the part, so that it looks like a greatly hypertrophied pons. A little posterior to the middle of the pons on the right side, is a focus of softening, spherical in shape, and about three-quarters of an inch in diameter. When hardened, a section of the pons at its largest point measured two and a half inches in width and one and three-quarters inches in depth. The tumor seems to be confined pretty accurately to the pons; the crura cerebri, and the medulla oblongata being but slightly enlarged.

On microscopical examination the nervous elements of the pons are found to be encroached upon, infiltrated, and, in some places, destroyed by a great accumulation of small cells. The prevailing character of these cells is spindle, although there is a considerable number of spheroidal cells, both large and small. There is no considerable development of "spider cells." Between the small newly formed cells there seems to be a delicate newly formed basement membrane, independent of the neuroglia. There is also present a very great many newly formed vessels full of blood. The proliferation of cells is not limited to the pons, nor is it circumscribed by any sharp line, but extends throughout the whole extent of the crura cerebri and the medulla oblongata, being less abundant the further the section is removed from the pons. In the anterior part of the crura cerebri the roof of the aqueductus Sylvii is so softened that no section of it can be made, and from the posterior portion of the third ventricle a canal about one twentieth of an inch in diameter, with well-defined walls, runs backward and downward, and terminates in a mass of softened tissue near the centre of the inferior surface of the crura cerebri. Neither the wall of this canal nor the neighborhood of the roof of the aqueductus Sylvii seems to be the especial seat of the glioma. The wall of the canal is remarkably firm and well-defined, except at its extremity where it terminates in the softened tissue on the under surface of the crura cerebri.

In regard to the exact diagnosis as to the nature of the tumor in this case, the diffuse infiltrating, rather than displacing character of the growth, makes it resemble a glioma; while the form of the cells, the presence of a basement membrane, and the absence of any considerable new development of "spider cells," is in favor of its being a sarcoma. Such tumors are sometimes called gliosarcomata; but in consideration of the remarkable way in which the normal (though hypertrophied) appearance of the pons is preserved in these tumors, it seems to me to be better to call them by the name proposed by Kuemmel,[1] "gliomatous hypertrophy of the pons."

The very vascular nature of such growths has been described by Spitzka[2] and others. Gerhardt[3] says that the vascularity of these tumors is so great that temporary congestions may lead to fatal attacks of apoplexy, and that frequent attacks of temporary paralysis and apoplexy are characteristic of gliomata, because of their great vascularity. The little canal which ran through the crura cerebri, connecting the third ventricle with the base of the brain, is of interest. It is evidently analogous to the fissures sometimes found in the posterior horns of the spinal cord, which Schultze[1] has pointed out, are usually due to softening of gliomata. Similar changes have been described by Fuerstner and Stuehlinger[2] as occurring in the cerebral cortex. In this case the softening extended across the crura cerebri in a straight line to the third ventricle. It is possible that this softened tissue was simply absorbed, and that the canal was thus formed; but it seems to me much more probable that the pressure of the fluid in the ventricles, which was great enough to cause a thinning and almost a perforation of the corpus callosum, forced and washed out the softened gliomatous mass, and thus formed the canal. The patch of softened tissue near the centre of the pons, not being subjected to the pressure of any fluid, remained in situ.

Although in this case the tumor was of large size and involved a portion of the nervous system, lesions of which are especially prone to produce paralysis, yet there was no disturbance of sensibility and no absolute paralysis of motion, except that of the left arm and leg, and even this paralysis varied somewhat from day to day. Gerhardt[3] says that even in large gliomata permanent paralyses are often absent, because the nervous elements within the tumor are not destroyed by it. The paralysis of the left arm and leg in this case was probably due to the patch of softening in the right side of the pons, this was the only patch of softening in the tumor. Throughout the rest of the pons, medulla, and crura cerebri, the nervous elements were compressed, but not actually destroyed; and consequently, although there was widespread paresis, there was no paralysis. The nerve cells and fibres composing the gray matter which forms the floor of the fourth ventricle, were compressed by the new-formed cells of the tumor; and in consequence the patient presented the symptoms of bulbar paralysis, *i. e.*, drooling, paresis of lips, tongue, and pharynx, difficulty of articulation, and difficulty of deglutition. Belonging to this same set of symptoms are the disturbances in the centres for respiration, circulation, and the ocular muscles, which, curiously enough, were most marked when the patient was asleep. Besides the gray matter there are two great systems of fibres in the pons; one, the transverse fibres, connects the cortex of the cerebellum with that of the cerebrum, and probably transmit impulses relating to the coördination of movements; the other, the fibres of the pyramidal tract, connects the cerebral cortex with the subcortical centres and through them with the muscles, and transmits impulses for voluntary movements. Both of these sets of fibres were pressed upon by the rapidly increasing cells of the tumor and their function impaired, and consequently the earliest symptoms of the tumor

[1] Zeitschrift f. klin. Med., vol. ii p. 282.
[2] N. Y. Med. Journ., 1836, vol. i. p. 364.
[3] Würzburger Jubilaeumschrift, 1882.

[1] Virchow's Archiv, vol lxxxvii., p. 510, and vol. cii. p. 435.
[2] Archiv f. Psychiatre, vol. xvii. p. 1. [3] Loc. cit.

were incoordination of movement and weakness, which steadily increased in intensity up to the time of death. The absence of disturbances of sensibility in this case does not prove that the sensory fibres escaped the pressure, for it is well known that in cases of a general lesion of the spinal cord the motility is more easily impaired than the sensibility.

This tumor in its growth produced no symptoms of irritation, there were no convulsions, and but little headache. There was simply a steadily increasing loss of function of those nervous elements, which were subjected to the pressure of the growing tumor. It is remarkable that, notwithstanding the great amount of œdema of the brain present in this case, and an internal hydrocephalus, so extensive as to cause a perceptible enlargement of the head, consciousness and even intelligence were preserved up to the end of life.

AN INTERESTING CASE OF SPURIOUS ANEURISM OF THE INNOMINATE ARTERY.

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I DESIRE to place on record the history of this interesting case, chiefly because it is a very good example of the fact that even the most definite signs of true aneurism may be present, and yet the post-mortem examination prove the entire absence of any lesion of the bloodvessel.

The symptoms and physical signs of this lesion were so evident that I reported the case as one of innominate aneurism with aortic dilatation, in the *Medical Record* of May 16, 1886, but not until several other physicians had also reached the same opinion as to the character of the case. The reasons for my so doing become evident when the following history is read:

Annie D., æt. seventeen years, came under my care in March, 1886, complaining of cardiac palpitation and severe pain in the chest and left arm when laying down. This pain was then of about three months' duration, and was steadily growing worse. There was no history of syphilis, but there was one of frequent attacks of acute articular rheumatism, recurring every winter for the last six or seven years. Her father and a brother are also subject to the same disease, but the two remaining children are free from it. She was fairly well developed, but pale and anæmic; menstruated first at the age of fourteen years. There was no history of traumatism, or of scarlet fever.

On inspection, there was to be seen an egg-shaped protrusion in the supra-sternal notch, very expansile, and bulging at each systole of the heart. The dilatation extended well up into the innominate artery for over an inch from its point of origin. Pulsation was strongly marked in all the vessels of the neck. The apex beat of the heart was in the sixth intercostal space, about an inch to the left of the nipple. There was no distinct thrill over the precordial space, but it was well marked in the supra-sternal notch and over the dilated portion of the innominate artery. On auscultation over the swelling there was heard a rough and a soft murmur, accompanied by a *thrill*. Over the aortic orifice was heard a double murmur—a short, sharp, and rough systolic, and a long, softer, and more blowing diastolic. These murmurs were very distinct over the sternal notch, the diastolic murmur becoming intensified as the ear was carried down the sternum, reaching its maximum at the ensiform cartilage. Over the pulmonary orifice both murmurs were heard, but were somewhat muffled. Both were transmitted posteriorly to the left, but did not depend on mitral disease, as they were heard more loudly over the right scapular region than the left. Both murmurs could be heard in the vessels of the neck, the diastolic feebly. There was the typical "water-hammer" pulse, 2- to the quarter minute, with marked difference in volume of the pulse in the radial arteries, both to the finger and as registered by the sphygmograph, the right falling behind the left. Abdominal pulsation could be seen, but it was not marked. Percussion revealed cardiac dilatation, with great hypertrophy. There was no dysphagia, dyspnœa, or loss of voice.

The patient was now lost sight of till September 13, 1886, when she came under the care of Dr. Griffith, to whom I am indebted for several additional points of interest. During the time she had been away the pain had become paroxysmal in character, and was sometimes preceded by unpleasant, undefined sensations. There was also, at this time, marked dyspnœa during the pain, which did not exist when she was first seen by me. The pain decreased under the use of small doses of nitro-glycerine, but no marked improvement took place. The case again passed out of sight till the middle of March, 1887, when she returned to the writer, complaining of great pain in the abdomen, half way between the umbilicus and the ensiform cartilage.

On examination, there was found a very marked localized pulsation noticeable to the eye and touch. Auscultation also discerned a bruit of a not very positive character, but fairly well marked. The pain in the chest was worse, and the whole condition of the patient far worse than when last seen.

Nothing more was heard of her till the 28th of May, when her mother came to me, stating that at 4 A.M. they had heard her coughing, and at 5 A.M. found her dead in bed. The post-mortem, made the next day by Drs. Osler and Griffith, and myself, showed very marked disease of the aortic valves, with the entire escape of the mitral leaflets, and also total absence of any structural lesion of the aorta or of the innominate artery, the coats of both of which being found smooth, devoid of calcareous deposits, and perfectly normal, except for a slight increase in elasticity when stretched; and not only was this the case, but there was no increase in the calibre of either bloodvessel after death, proving that all the symptoms seen during life had arisen from an over-elasticity, and not a rupture of any one of the coats of the bloodvessel wall. The abdominal aorta was also found to be of a normal calibre, and devoid of any pathological condition.

It will be seen that in this instance we were confronted by a case in which all the ordinary and well recognized symptoms of aneurism of these vessels were present to a well marked degree, and there was nothing to stand against the diagnosis of aneurism during life, save the age of the patient, who was, of course, unusually youthful for this affection.

It is proper to state that such cases have been previously recoided, and that, as a general rule, they occur in young females of a hysterical temperament, although they may also appear in males with the same tendencies. There is no reason, apparently, why such a condition of the bloodvessels, occurring in a person not suffering from any cardiac lesion, should provoke anything but a favorable prognosis;

and, since an unfavorable opinion may in such cases do great harm, it is well for the physician to be on his guard.

OPERATION FOR DEFLECTION OF THE NASAL SEPTUM.

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I REPORT the following case on account of the simplicity and successful termination of the operation performed for its relief.

M. S., white, aged forty-five, had suffered from what he thought to be an unusually severe case of catarrh for five or six years, attended with exfoliation of bone.

His cartilaginous septum had become deflected to the right and depressed, causing an unsightly deformity and great difficulty in breathing.

On examination the lumen of the right nostril was found to have contracted to about the size of a small pea, as a result of adhesive inflammation, and the left nostril was greatly diminished on account of the deflection. There were also evident signs of exfoliation of bone on the right wall of the septum.

A pledget of cotton, saturated with a 10 per cent. solution of hydrochlorate of cocaine, was first introduced into each nostril, and under a continuous spray of rhigolene vapor the adhesions in the right nostril were divided, and the normal calibre restored.

A curved bistoury was then passed high up into the left nostril and through the septum, and an incision was made obliquely from above downward, and from left to right, along the line of the deflection, and extending to within one-quarter of an inch of the external end of the septum. A steel pin, upon which a small disk of rubber had been previously threaded, was then introduced into the right nostril and through the septum above and in front of the incision, its point being in the left nostril, was brought close up against the septum, across the incision and buried in the mucous membrane lining the floor of the nostril.

This, besides bringing the septum into a perpendicular position, widely distended the left nostril, and separated the walls of the right, which had been previously adherent, and he was enabled to breathe freely. A second pin was introduced, parallel to and a little above the first. On reporting at my office at 9 A.M. the following morning, the second pin was removed, as I found its point had not been carefully imbedded, and at 2 P.M. he again reported to me, stating that he had accidently withdrawn the remaining pin, and I anticipated a prompt return of the disfigurement. This, however, did not occur. He was ordered a posterior nasal douche to keep the passages cleansed.

With a piece of cotton mounted on a small cotton carrier, I carefully prevented any return of the adhesions in the right nostril, and on the sixth day he was discharged with perfectly free respiration and scarcely a trace of his previous deformity.

This operation is recommended by Dr. J. B. Roberts, of Philadelphia, my only departure from his instructions being the obliquity of the incision from left to right through the septum, so that in correcting the deflection the cartilage was at the same time raised, thus correcting the depression which previously existed.

HOSPITAL NOTES.

JEFFERSON COLLEGE HOSPITAL, PHILADELPHIA.

OPERATION FOR PROCIDENTIA UTERI.

DR. A. MARTIN, of Berlin, was introduced to the Class by Prof. Parvin on September 22d, and gave a demonstration of his operation for the treatment of procidentia uteri.

Procidentia uteri, he stated, is not to be satisfactorily treated by any operation which closes a large portion of the vagina only; the cicatricial tissue so formed will not endure: the operative treatment of this affection to be successful must include the uterus, the vagina, and the perineum. The patient presented for operation, a multipara, was suffering from retroflexion, subinvolution, and unilateral cervical laceration of the uterus with procidentia.

Dr. Martin described his plan of operation (as given in his book and that of Hegar and Kaltenbach) by diagrams upon a blackboard. He stated that he preferred catgut prepared in oil of juniper for suture material, and that he employed the continuous suture on the vagina and perineum, and the interrupted suture on the cervix uteri.

Proceeding to the operation Dr. Martin employed continuous irrigation with weak bichloride solution, stating that he was thus enabled to dispense with sponges; that the hemorrhage was insignificant, and that a cleanly and antiseptic operation was thus performed.

He first drew down the uterus, and amputated its cervix by wedge-shaped excision of the anterior and posterior lips, with subsequent interrupted suture. He then proceeded to operate upon the anterior vaginal wall, stating that for denudation in such operations he preferred a knife which he had devised whose edge was so arranged as to cut in many directions. After denudation he introduced the continuous catgut suture from above downward, meeting no difficulty in coaptation until the lower portion of the denuded surface was reached, where it was necessary to introduce étage sutures. The suture was brought back to the point of origin, and the uterus replaced with a sound.

The posterior vaginal wall was then denuded, the operation being so performed as to utilize the firm tissues of this portion of the vagina as a support for the uterus. Beginning at the vaginal column, the left side of the denuded surface was first closed, and then the right by the continuous suture. The cicatricial tissue in the perineum was then exsected; a single strong suture placed at its upper extremity and the remainder closed by the continuous suture, étage stitches being employed wherever needed; the continuous suture was brought back to the point of commencement, completing the operation.

The result was a firm perineum, a vagina restored throughout its entire extent, and a uterus replaced and

stimulated to involution by the excision of diseased cervical tissues.

The after-treatment advised was three weeks' rest in bed, the avoidance of movement of the bowels for four days, freedom from exercise for three months, and abstinence from sexual relations for eight or ten months. Ordinary precautions to secure cleanliness were to be observed. In the event of pyrexia, antipyretics were to be given. No local treatment or manipulation was desired.

MEDICAL PROGRESS.

Total Extirpation of the Uterus.—Schauta, of Prague, in the *Wiener medizinische Presse* of July 3, 1887, discusses the choice between partial and total extirpation of the uterus for cancer. He quotes the statistics of those operators who favor early extirpation, as compared with partial resection, as follows:

After total extirpation 70 per cent. of patients operated upon were in good health one year after operation; 50 per cent. of those on whom the partial operation only was made. After two years 100 per cent. of recoveries from the radical operation were in good health, 40 per cent. of recoveries from the partial operation; after three years the proportion was 100 to 40 per cent.; after four years 55 to 38 per cent.; after five years 43 to 35 per cent. Schauta reports a typical case in his own practice where an excellent result followed operation for the disease in its incipiency. He strongly advises early and radical operative treatment.

Sulphur in Chlorosis.—In some cases treatment stimulates the secretory activity of the gastric mucous membrane; in others, ferruginous drugs are successful; in others, both proceedings are useless. In these latter cases there is a deficiency, not of iron, but of sulphur, without which living albumen and active cellular substance cannot exist. Basing on these theoretical considerations, Schulz and Strübing have given sulphur in chlorosis. From the six cases thus treated they draw the following conclusions:

1. In cases of simple chlorosis, in which iron has no effect, the general condition is markedly improved by sulphur.

2. After sulphur has been given for some time, treatment with iron could be started and continued successfully.

3. Sulphur is not borne in cases of chlorosis complicated with catarrhal, inflammatory conditions of the digestive tract.

℞.—Sulph. depur. . . . . 150 grains.
Sacch. lact. . . . . 300 grains.
M. F. pulv. Half a teaspoonful three times daily.
—*Medical Chronicle*, August, 1887.

Metrorrhagia at Puberty.—Dr. Henry C. Coe, of New York, reports the following interesting case of this in the *New York Medical Journal* of August 27, 1887:

A perfectly healthy girl, aged thirteen, well developed for her age, of a full habit, and has never shown any evidence of sexual precocity, or nervous excitability, began over a year ago to menstruate at long intervals, and since spring the flow has reappeared more regularly, and on one or two occasions has been profuse, but not excessive. There has never been any dysmenorrhœa. She has now been at the seashore nearly five weeks, and has during that time been exposed to the usual excitement, late hours, improper diet, etc., incident to life at a fashionable watering-place. She has, however, neither danced nor indulged in seabathing. She had been at Long Branch two weeks, and was awakened during the night (July 13th) by cramps in the stomach, accompanied by a sudden gush of blood from the vagina. The flow continued steadily, and when Dr. Coe saw her the next morning she presented the appearance of a woman after a smart postpartum hemorrhage, her night-dress, the sheets, and the mattress being literally soaked with blood, while there was a large mass of blood-clot in the bed. He estimated the loss of blood at about twelve ounces. The child was kept for three days in the recumbent posture, on low diet, and had twenty-five drops of the fluid extract of hydrastis canadensis every six hours.

On the fifth day she was allowed to walk down stairs to breakfast; there had been no show for two days. While eating she felt a peculiar sensation in her stomach and at once returned to her room and lay on her bed. Suddenly there came a gush of blood, as on the first occasion, although the amount was somewhat smaller than before. The use of hydrastis, which had been discontinued, was resumed in doses of twenty five drops every two hours without result. Several napkins were saturated in rapid succession, and the child's mother became greatly alarmed. Ergotin, in full doses, was administered every two hours, and an ice-bag was applied over the hypogastrium, but was removed at intervals of half an hour. A pint of hot water, containing two drachms of alum, was carefully injected into the vagina with great difficulty. The little patient had no pain, except an occasional cramp, which preceded the expulsion of a clot. Her pulse and temperature were not affected. The flow diminished during the afternoon, but was still excessive, even for an adult. The blood was brightred in color, and was certainly not menstrual in character.

During the next forty-eight hours two alum injections and two drachms of the fluid extract were given daily. The hemorrhage gradually diminished until by the fourth day only two ounces of blood were lost. On the sixth day there was no show, and the patient was allowed to sit up and walk across the room, as her appetite was impaired by the close confinement. She felt a little weak, but was not otherwise affected by the loss of blood. She was not allowed to leave her room. Four days after the complete cessation of the last hemorrhage the regular menstrual flow began at exactly the proper time. There was no pain, but the flow was unusually profuse. She was kept absolutely quiet in bed during the first five days, and received twenty-five drops of aromatic sulphuric acid every six hours, with alum injections, night and morning, during the first two or three days, neither of which seemed to have the slightest influence upon the menorrhagia. Dr. Coe is convinced that the excessive loss was directly due to residence at the sea-shore.

The patient subsequently went to the White Mountains, and has had no return of the metrorrhagia.

Treatment of Acne.—Lassar recommends a treatment of acne which, he says, is easy of application, and nearly always successful. He uses a modification of the old ointment of Wilkinson in the following form:

R.—β Naphthol	150 grains.
Sulph. præcip. . . .	750 grains.
Vasal. flav., or Landol. puriss.,	
Sapon. viridis	āā 375 grains.
M. leniter torendo fiat pasta.	

The paste is spread in a thin layer on the affected skin, and left on for fifteen to thirty minutes. A burning sensation is felt, but this soon disappears; the ointment is then rubbed off, and powdered talc is dusted over. This is followed by a slight inflammatory reaction, which soon gives way to browning of the skin, and finally desquamation. The whole process is compared to the browning, etc., of sunburn. The desquamation may be shortened by the nightly application of a two per cent. salicyl-zinc-amylum-vaselin paste.

Lassar has employed this treatment in more than 100 cases, and relates some very successful cures of very bad cases. This paste is of service, too, in other superficial inflammatory skin diseases, as sycosis of the beard, and in lupous granulations.—*Medical Chronicle*, August, 1887.

Liver Abscess in Children.—Unger, of Vienna, after reviewing the recent literature of this disease, concludes that children are less liable to hepatic suppuration than adults.

With the exception of abscesses from impacted gallstones the same causes obtain in children as in adults. The symptoms are peculiar to the individual case. The most important symptom is chills and pyæmic fever in a previous disease of the area connected with portal or mesenteric veins. Percussion and aspiration will complete a diagnosis.—*Wiener medizinische Presse*, July 31, 1887.

Sulphurous Acid and Liquid Vaseline, for Phthisis.—Villi exhibited at a recent meeting of the Therapeutic Society of Paris a solution which he had made for Dujardin-Beaumetz, of sulphurous acid in vaseline; the strength of the solution varied with the temperature from 1 in 100 to 2 in 100 parts. It was given hypodermatically in the gluteal region, as deeply as possible, in doses of 75 minims daily. General improvement in the symptoms and general condition of the patient was the result.—*Revue Générale de Clinique et de Thérapeutique*, August 4, 1887.

Convallarin and Convallamarin, Glucosides of May-lily.—Nathanson, a Russian physician, has investigated these substances, with the following results: The first step made by Dr. Nathanson was to have the commercial glucosides analyzed; a second, to undertake a series of therapeutic experiments at Professor Koshlakoff's clinic. The first preparation of convallamarin obtained by him from Merck (in 1885) proved to be a mixture of that glucoside with convallarin and some products of decomposition of both, as an analysis by Professor A. A. Loesch had established. The explanation of discrepancies between different observers was then pretty near. Of course, no experiments were made with that preparation, and the purest glucosides were obtained from Merck to be given in four cases of disturbed compensation (in a patient, aged fifteen, with aortic regurgitation and relative mitral insufficiency; in two patients, aged fifty-seven and forty, with aortic regurgitation alone; and in a patient, aged forty-eight, with mitral regurgitation and stenosis). The results were these.

1. Convallarin (given in the dose of from $\frac{5}{10}$th to $1\frac{1}{2}$th grains three or four times daily for three to eight successive days) produced only nausea, diarrhœa, and gastric pain. The pulse, breathing, daily amount of urine, and dropsy either remained unchanged or showed unfavorable alterations.

2. Convallamarin was administered in the daily (gradually increasing) dose varying from one-half to five grains for eleven to seventeen successive days. In one of the patients, to whom digitalis, scilla, caffeine, and adonis had been previously given and failed, convallamarin also remained, on the whole, inactive, the improvement consisting only in a slight decrease of dyspnœa and palpitation after exercise. But in the remaining three patients a rapid and striking improvement ensued; the pulse became slower and more regular, the amount of urine augmented, dropsy decreased, and all other signs of disturbed cardiac compensation gradually and steadily disappeared.

3. Of accessory effects, only slight nausea, salivation, and giddiness were observed in one of the patients when the daily dose had been increased to 4½ grains; in another, slight nausea and vomiting made their appearance when the daily dose had been raised to 3¼ and 6 grains.

4. No cumulative action was ever observed. The general conclusion of Dr. Nathanson is to the effect that convallarin possesses but a purgative action, while convallamarin represents a useful cardiac drug endowed with the power of reëstablishing disturbed compensation, and free from any unpleasant accessory effects. Selection of an absolutely pure preparation is a matter of paramount importance.—*London Medical Record*, July 15, 1887.

An Incompatible Prescription.—Powell found the following incompatible, from the formation of a heavy double chloride of quinia and mercury, which was precipitated.

Tinc. ferri perchlor	℥vj.
Quin. disulph.	gr. xlviij.
Acid. hydrochlor. dil. . . .	q. s.
Liq. hydrarg. perchlor. . . .	℥iv.
Aq. dest.	ad ℥xij.

—*American Journal of Pharmacy*, August, 1887.

The Microbe of Wolf Rabies.—In a preliminary note in the *Vratch*, No. 21, 1887, p. 415, Drs. Julius Motte and N. Protopopoff, of Professor S. D. Kostiürin's laboratory, in Kharkov, state that while studying wolf rabies they have met with a microörganism which seems to be closely connected with the rabic virus in wolves. The following is an outline of the experiments. A young wolf was inoculated by hypodermatic injection of an emulsion of the brain of a dog which had died from spontaneous rabies of the furious

type. Twelve days and four hours later the wolf developed symptoms of paralytic rabies, which ended fatally in about forty hours. Half an hour after the animal's death, an emulsion of the wolf's brain was introduced beneath the dura mater of a rabbit by trephining. The rabbit died in three days; an emulsion of its brain was inoculated in a second rabbit, from that to a third, and so on. A fifth rabbit, and a sixth inoculated from the fifth, died about twelve hours after the operation, with all the symptoms of paralytic rabies. On the *post-mortem* examination of the sixth rabbit, a considerable quantity of opaque fluid was found between the dura and the pia, and in the subarachnoid spaces. This fluid contained, besides a few leucocytes, an enormous number of extremely minute, short, and very motile bacilli, of a very special kind; in fact, the fluid represented a natural "pure culture" of the microorganism. An inoculation with brain and spinal cord from that rabbit invariably produced paralytic rabies in other rabbits, death always ensuing in about twelve hours. On *post-mortem* examination, the same microbes were found in all cases. The animals' blood also contained similar bacilli, but in far smaller numbers. A rabbit inoculated by trephining with the blood died in twenty nine hours. Having prepared a pure culture in meat broth, Drs. Motte and Protopopoff inoculated it either by trephining or by hypodermatic injection. In the former case, all the animals (four rabbits) died from paralytic rabies in twelve hours; in the latter, in from two to six days. The same microorganisms were detected in a young rabbit which had been inoculated by trephining with an emulsion of the brain of another wolf, which had died of spontaneous rabies. The authors promise to publish at an early date the results of their inquiry into the morphological and biological features of the microbe which they have discovered.—*British Medical Journal*, July 23, 1887.

TERPINE IN PILL FORM.—RABOW gives the following formula:

R—Terpini hydrat.	. . . .	gr. 45.
Sacc. alb.		
Mucilag. gum. Arab.	. . .	āā q. s.

ut f. pil. 30 in num.

Sig.—One pill three times daily.—*Therapeutische Monatshefte*, August, 1887.

WOUNDS INFLICTED BY LIONS.—At a recent meeting of the Paris Surgical Society a report from M. JEANNEL, of Toulouse, was read, narrating an interesting case of an animal tamer, aged thirty, whose arm was severely bitten to the shoulder by a lion. The wounds were lacero-contused; the humerus was laid bare; the limb had been amputated at the elbow-joint by the lion. The accident occurred at 9 P.M.; there was no excessive shock or prostration, and the surgeon postponed active interference until morning. On the following day well-marked emphysema and gangrene were present; temperature 105°; the general condition of the patient bad. Amputation at the shoulder-joint, after preliminary ligation of the subclavian and scapular vessels, was made at once. There was slight hemorrhage; patient died of profound septicæmia in a few hours.

M. POLAILLON had a similar case, two years previous, of lacero-contused wound, with multiple comminuted fracture of the forearm from a lion's bite. He amputated immediately at the shoulder-joint, but the patient died of acute sepsis. The origin of septic infection in these cases was thought to be not only the contusion of the tissues, but contagion from partly decomposed meat which the lion was eating. Amputation should be made promptly.—*Revue Générale de Clinique et de Thérapeutique*, August 4, 1887.

PEAT MOSS AS A DEODORIZER.—DR. D. M. USPENSKI, in a preliminary note in the *Vrach*, describes a number of bacteriological and other observations he has made on a kind of peat moss belonging to the sphagni, which is indigenous in many parts of Russia and Siberia, and which is used with considerable success in the form of coarse powder for disinfecting cesspools and privies in Warsaw, Riga, and other towns. It is found that about four ounces sprinkled over an ordinary stool are sufficient to deodorize and dry it, so that the receptacle can be emptied and cleaned at proper intervals without any unpleasantness arising. This substance seems to have a wonderful power of absorbing moisture, for it was found by experiment that a pound of it which already contained 25 per cent. of water was capable of absorbing no less than seven pounds and a half more water. When added to fecal matter in the proportion of 10 per cent. by weight, it changes it into an almost dry mass of an earthly appearance, devoid of smell and easy to remove. A hundred pounds of the powdered moss will absorb 1438 litres of ammonia. The dry mass obtained by the action of the moss on feces, on being analyzed by Mr. Miltser, was found to contain from 2.38 to 2.66 per cent. of nitrogen, and from 0.96 to 1.15 per cent. of phosphoric acid, and, of course, formed a very valuable manure. The powder as received contained 23.9 per cent. of water and 5.38 per cent. of ash, and without any preliminary drying they absorbed fourteen times their own weight of water. Bacteriological experiments proved that the moss has a great capacity for diminishing microorganisms of various kinds. If this substance can be easily and cheaply obtained, it would appear to offer advantages over the dry earth we are accustomed to use, and in large towns would doubtless prove very valuable.—*Lancet*, September 10, 1887.

RESORCINE, EXTERNALLY.—WYSS recommends the following for *eczema*:

Resorcin	. . . . .	3i.
Glycerine	. . . . .	3ss.

And also,

Resorcin,	. . . . .	gr. 15 to 30.
Vaseline	. . . . .	3ss.

UNNA advises a five per cent. pomade for *eczema*, *variola*, and *scarlatina*.

For *pityriasis versicolor* IHLE has found useful:

Resorcin	. . . . .	3ij½.
Vaseline	. . . . .	3ij½.
Rice powder,		
Oxide of zinc	. . .	āā 3vi¼.

In *erysipelas* resorcin may be given hypodermatically in five per cent. solution, or externally in seventy per cent. ointment.—*Revue Générale de Clinique et de Thérapeutique*, September 1, 1887.

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SATURDAY, OCTOBER 1, 1887.

CHOLERA AT THE NEW YORK QUARANTINE.

The arrival at the Port of New York of the steamship "Alesia" of the Fabre line, from Naples *via* Marseilles, with cases of cholera on board, is a warning which is not likely to be overlooked or neglected. The danger from this particular importation of the disease is probably extremely small, but it has been recognized in time, and the quarantine establishment of New York is probably better fitted than any other to deal with the emergency. The passengers have been transferred to the buildings on Hoffman and Swinburne Islands, the well being separated from the sick, and they will there be kept under observation for a reasonable time. Several cases have occurred among those who were apparently well when landed, showing that the infection was pretty thoroughly disseminated among them, and so long as fresh cases continue to occur, so long it will be necessary to keep up the isolation.

The ship itself and the baggage are probably more dangerous than the passengers as sources of infection, but they are easier to deal with, and it may be considered as certain that they will be completely and effectually disinfected. Taking all these circumstances into consideration in connection with the lateness of the season it is very improbable that there will be any spread from this particular importation.

The significance of the presence of these cases in New York harbor is, and upon this too much stress can hardly be laid, that the specific cause of cholera exists in some of the Mediterranean ports, and probably also in the interior in their vicinity, although there may be few or no signs of its presence, in a form which is capable of becoming virulently active under favorable circumstances, and that therefore all ships and immigrants from these ports are more or less dangerous. This danger with regard to any particular ship on which the disease has not appeared when it arrives on our coast is very small, so small that, in view of the many other channels through which cholera might now come to us, it would not be worth while to enforce special precautions, but taking into consideration all the sources of importation of cholera to which we are now exposed, the persistence of the disease in Europe and its appearance in South America, the danger of its introduction into this country within the next nine months is very considerable.

We have had a long forewarning, and during the past three years much has been done to put our cities, towns, and villages into good sanitary condition, but much remains yet to be done, and it is to be hoped that the infected "Alesia" will prove to be a powerful stimulus to municipal authorities, water boards, and health officials to carry out the well-known measures for securing cleanliness and pure water, which are the only certain safeguards against this form of epidemic disease.

HYPERSECRETION OF GASTRIC JUICE.

The functional value of a glandular organ and that of its secretion may be considered identical. An apparent exception is furnished by the stomach, an organ to which muscular movement is of decided importance in the performance of its function. There are numerous facts, however, which prove that a normal gastric fluid is not secreted by a stomach of which the walls are atonic from any cause. A digestive secretion, to be normal, must not fall below or exceed a certain amount; it must have a definite composition; and, finally, it must be discharged through its ducts or follicles, intermittingly or remittingly. Being intended to act upon the food, its presence in the stomach when food is absent is out of place, uncalled for, and constitutes a morbid condition.

Nearly all functional disorders of the stomach are classed under the head of dyspepsia, and their treatment is based upon the theory of a deficient or altered gastric secretion. Hence, the constant administration of pepsin, pancreatin, acids, and alkalies. It is only quite recently that certain well-marked stomach disorders have been proved to be due to an excessive and unintermittent secretion of gastric juice. This condition is by no means a pathological curiosity. First described by Reichmann, in 1882, cases have since been reported by Sahli, Schütz, van den Velden, and especially by Riegel, who, in the course of the last eighteen months, has seen twenty nine cases.

The symptoms of hypersecretion of gastric juice,

or, to be more accurate, of unintermittent secretion, depend upon the duration of the morbid state, and on the hygienic environment of the patient. Sometimes the emaciation, feebleness, and anæmia are so extreme as to excite the suspicion of carcinoma, and with these symptoms there is apt to be epigastric tenderness and dilatation of the stomach. On the other hand, cases of old standing may present little evidence of impaired nutrition. Increased thirst, heart-burn, nocturnal attacks of pain in the epigastrium, acid eructations and vomiting, and dilatation of the stomach, constitute a set of highly diagnostic symptoms. The only certain means of diagnosis, however, is afforded by an examination of the contents of the stomach. If these be removed from five to six hours after a frugal meal, the following indications will be obtained: 1. The amount of material in the stomach is much greater than is usually found at such a late period of digestion. 2. The albuminoids are completely digested. 3. The amylaceous substances are undigested. 4. The fluid is more than usually acid. Riegel (*Deutsche med. Wochenschrift*, July 21, 1887) has found the percentage of hydrochloric acid three times greater than normal.

As above stated, these are *indications*. Absolute proof of the condition is furnished by the withdrawal of the stomach contents when the viscus is empty of food. The stomach is thoroughly washed out in the evening, and the patient fasts until the following morning, when the sound is again introduced. If the condition under consideration is present, from 8 ounces to a pint of a colorless or greenish, turbid, slightly viscid fluid will be withdrawn. It is strongly acid, gives all the reactions of hydrochloric acid, contains no organic acids, and digests albumin rapidly. In short, it is gastric juice.

Hypersecretion must not be confounded with hyperacidity. The latter consists in a too liberal response to a physiological summons, while the former is gratuitous. There are, however, transitional forms between the conditions, for the secretion which is excessive in response to a physiological, will, in time, be produced in the absence of any stimulus.

There is an undoubted relation between hyperacidity and hypersecretion and gastric ulcer. In more than one-third of Riegel's cases decided symptoms of ulcer, including hæmatemesis, had been present at one time or another. This observer holds that the excessive secretion of hydrochloric acid is not, as Jaworski believes, a direct, but merely a predisposing cause of ulcer. The ordinary dangers of a trauma of the gastric mucosa are greatly increased under such circumstances. A simple erosion in a stomach that is never empty of gastric juice will probably proceed to the formation of an extensive ulcer.

The causes of hyperacidity and hypersecretion are not, as yet, understood; but that the condition is of neurotic origin is proved by its ephemeral occurrence in neuropathic individuals in general, and particularly during the *crises gastriques* of those affected with tabes.

The chief features of the treatment are the methodical washing out of the stomach, preferably just before the principal meal, and the employment of alkalies and alkaline mineral waters. In no other affection is lavage of the stomach more beneficial. The diet should consist almost entirely of albuminoids, and the thirst, often excessive, may be assuaged by bits of ice, for it is an important point that the dilatation of the stomach, so frequently present, should not be maintained by a too free ingestion of fluid. So important is this considered by Riegel that he advises the use of small doses of opium to obtund an overpowering sense of thirst.

THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE.

THE new fire-proof building for the Army Medical Museum is now approaching completion, and a large part of the Library has been transferred to it, and is thus safe from fire, although the books are not accessible, being piled on the floor of the Library Hall, awaiting the completion of the iron book stacks in which they are to be placed. The original contract called for the completion of this building in April last, but the builders have not complied with their agreement, and it will probably not be completed until November next.

In July last the Secretary of War ordered that the rented buildings occupied by about 150 clerks in the pension division of the Surgeon-General's Office should be vacated by September 1st, as Congress had made no provision for rent for these buildings for another year, and that room must be made for these clerks in the old Museum building, which belongs to the Government. This necessitated the vacating a large part of the Library hall and of the rooms connected with it, and the packing into the smallest possible floor-space of the books, which could not be moved. The result of the peremptory order of the Secretary of War is that the Library has been practically almost inaccessible for about six weeks, and it will remain so until the middle of October. We have heard some complaints about this, and especially that it should have occurred during the meeting of the International Congress, but, as the result of careful investigation, we are satisfied that it was practically unavoidable, and that the Medical Department has been in no way to blame for the delay and confusion.

The insinuations which have been made that the

closure of the Library during the Congress was unnecessary, and that it was intended as a slight to that body, are wholly without foundation, for we know that Dr. Billings used every effort to hasten the work, and that no one regrets more than he does the fact that the Library could not be accessible to visitors at that time. Fortunately it was found possible to leave the Museum practically undisturbed, and it received a large number of interested visitors during the week of the meeting of the Congress.

It is very satisfactory to know that the treasures of the Library and Museum will soon be not only out of the dangerous position in which they have heretofore been placed, but also in light and airy rooms, where they can be properly displayed and classified, and thus be most interesting and useful.

THE ETIOLOGY OF ACUTE ENDOCARDITIS.

We have already referred to the observations of Orth, Philipowicz, Prudden, and others, which demonstrate the constant association of microörganisms with the lesions of ulcerative endocarditis, and the possibility of the artificial production of the disease in animals with or without previous laceration of the valves. A number of forms have been cultivated, chiefly cocci, but in one or two cases small bacilli, and in two instances in which the endocarditis complicated pneumonia, the same kind of organisms were found in the lung and on the heart-valves.

Weichselbaum has recently studied the question with great care, and has given his results in the *Centralblatt für Bacteriologie und Parasitenkunde*, Bd. ii. No. 8. Cultures were made from fourteen cases of ulcerative endocarditis, as soon as possible after death, in some instances within an hour or two. In twelve, microbes were present; in six cases the streptococcus pyogenes; in three, the pneumonia diplococcus; and in three, less common, but equally distinctive, forms. In the two negative cases the vegetations were old and calcified. The experimental work confirms the results of previous observers regarding the feasibility of inducing artificial endocarditis.

A much debated point, upon which we need further observations, is whether in the ordinary verrucose endocarditis microörganisms are present in the vegetations. Klebs, Koster, and Ziegler regard this form as also bacteritic, but Osler, Orth, and others have failed to demonstrate their presence. Recently, E. Fränkel and Sänger, in *Virchow's Archiv*, Bd. 108, have found organisms in nine out of fourteen cases, and have shown that the colonies may be so scanty that the culture method gives much more definite results than can be obtained by section and staining. In two instances, however, Weichselbaum could not find them, and suggests, in explanation, that the vegetation may have been old and the organisms dead. More extended observations are required before we can attribute every case of warty endocarditis to the irritation of microbes on the valves; meanwhile the studies which have been made bring us nearer to the solution of the important problem of the origin of these secondary cardiac inflammations, so often disastrous in themselves, and more frequently injurious in initiating a progressive and damaging lesion.

The eighth volume of the *Index Catalogue* of the Library of the Surgeon-General's Office, U. S. Army, has just been issued, and extends from *Ligier* to *Medicine* (*Naval*). It covers 1078 pages, and includes 13,405 author titles and 36,816 subject titles. As examples of its richness in bibliography, we find that the references to "lithotomy" and "lithotrity" cover 85 columns, to the "liver" 142 columns, to "malaria" 15 columns, and to "measles" 26 columns. This volume, like its predecessors, has been compiled under the supervision of Surgeon John S. Billings, and, as has been well said by a contemporary, "if Dr. Billings had done nothing else for his profession, the talent and energy expended in this work would alone entitle him to the earnest gratitude of every lover of medical science and literature."

SOCIETY PROCEEDINGS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Held at Washington, September 5–10, 1887.

(Specially reported for The Medical News.)

SECTIONS.

Obstetrics.

Thursday, September 8th.

Dr. Emile Poussié, of Paris, read a paper on

TYPHOID FEVER OCCURRING DURING THE PUERPERAL STATE, AND TERMINATING IN RECOVERY.

The points of interest were: The development of the typhoid fever during the puerperal state; the anomalous début of the disease, resembling a commencing peritonitis; the form of the disease,—the ordinary one, of slight gravity although developed during the puerperium; and the fact that the sick woman not only recovered, but no sequelæ appeared.

Professor Simpson, of Edinburgh, thought it fortunate that Dr. Poussié had brought forward his case in connection with the subject of puerperal fever. It was important to observe that there might be many varieties of fever occurring in puerperal women. Dr. Poussié's case illustrated the possibility of the occurrence of typhoid fever during the puerperium, and such cases might be met with in all ranks of the community, wherever pregnant and lying-in women occupied bedrooms open to the invasion of sewer-gases. But sometimes

women recently confined have been said to die of puerperal fever, who have been the subjects of one of the other zymotic fevers. The danger of scarlatina in puerperæ was well known, and he had seen a parturient woman die three days after labor of measles.

The paper read, dealt, however, more directly with the febrile condition of the puerpera, resulting from the introduction of septic matter into the system, and resembling more or less the febrile condition set up in surgical patients after wounds and injuries. What might be the nature of the poison? How was it introduced into the system—whether only through the genital tract at the hands of the attendants, or also through the atmosphere? How were its ravages to be met? These were the questions now open for discussion in this Section.

DR. GRAILY HEWITT, of London, believed that defective contractions of the uterus are largely responsible for the occurrence of puerperal fever in private practice. This defective contraction is due largely to weakness. Therefore, he urged attention to hygiene and good feeding during pregnancy, and extreme care in securing firm retraction of the uterus after labor and during the early hours of the puerperium.

With reference to antiseptic precautions, he regarded the cavum uteri as the starting point of general infection in the majority of cases. For purposes of intrauterine irrigation, he recommended Berdin's celluloid, double catheter, exhibited at the Copenhagen Congress.

As regards treatment, he relied upon food and stimulation, relating the history of a case of the worst kind—a woman in a lying-in hospital hourly expected to die—patient recovering after the exhibition of a bottle and one-half of brandy within twenty-four hours.

DR. W. W. JAGGARD, of Chicago, expressed his belief in the Semmelweiss doctrine of puerperal fever. He desired to enter as vigorous a protest as possible against the irrational and pernicious use of intrauterine irrigation proposed by Dr. More Madden. When the indication for intrauterine irrigation after labor was perfectly clear and distinct—as after the introduction of the hand into the cavum uteri in version—the uterine cavity should be washed out with a two per cent. solution of carbolic acid in sterilized warm or hot water, by means of Carl Braun's hard rubber tube or Chrobak's modification of Bozemann's double catheter. This secured relative disinfection of the endometrium.

Then to secure continuous disinfection it was necessary to introduce a bacillus containing sixty to seventy-five grains of powdered iodoform, Mosetig-Moorhof's formula. The cavity of the uterus was now disinfected and permanently sterilized, and ought to be *let severely alone*. It was seldom necessary to repeat this process.

To secure retraction of the uterus it was good practice to apply gentle massage to the fundus uteri twice daily during the first forty-eight hours of the puerperium, as was customary in Carl Braun's wards in Vienna. There was little danger of interfering with puerperal thrombosis by this means if not continued longer than forty-eight hours. He agreed with Dr. Graily Hewitt, Kucher, and others that a well-contracted uterus was well nigh proof against infection. He had seen used and had himself used iodoform on a colossal scale since attention was called to the drug by Mosetig-Moorhof in 1881, and had never seen a case of iodoform toxæmia arise when the drug was employed as here described.

DR. JAMES C. CAMERON, of Montreal, said a satisfactory treatment for puerperal fever will never be reached until the profession learns to recognize that, in the immense majority of cases, puerperal fever is puerperal septicæmia. Robert Barnes, in a recent review of Parvin's *Obstetrics* in the *British Gynecological Journal*, says that this view is narrrow, because it does not take into account the peculiar condition of the puerperal woman's blood. He then reiterates his threefold theory of endosepsis, autosepsis, and exosepsis. Such teaching does great harm. Endosepsis is a myth, and if general practitioners are taught that puerperal fever can arise of itself, their practice can never be satisfactory. According to the germ theorists, septicæmia postulates the existence of two factors, the soil and the germ; hence rational antiseptic treatment should run on two lines, the sterilizing of the soil and the exclusion or destruction of the germs. The exclusion of germs after labor is best obtained by the dry method of dressing—the insufflation of iodoform into the vaginal outlet and the constant closure of the vulva with a dry antiseptic pad, sterilizing the air entering the genital canal. The pathologist sterilizes his culture tube, plugs it with cotton-wool, and thus keeps his culture free from the contact of atmospheric putrefaction germs; so the obstetrician plugs his obstetrical culture tube and keeps it free from atmospheric contamination.

With regard to the use of the uterine douche and curette, he had obtained brilliant results in suitable cases, but he strongly emphasized the warning uttered by Dr. Jaggard, that great harm is done by continued and injudicious douching. The object of local treatment is to remove local sources of infection; when this is once thoroughly done, a bacillus of iodoform is introduced and the dry dressing applied, the parturient canal is practically aseptic, and only harm will result from further local treatment.

When general systemic infection has occurred, a struggle between the white corpuscles and the microbes ensues; the issue depends upon the relative strength of the opposing forces, the army of the defender and that of the invader. The rational treatment of this general condition seems to be that applicable to all rapidly prostrating general diseases, such as diphtheria—large quantities of nutriment and stimulants, with iron and quinine, when required, will give more satisfactory results than any other. Success in the treatment of puerperal septicæmia will depend upon the skill of the physician in recognizing when to use local, and when to use general treatment. The patient must be treated and not the disease; there is no such thing as a specific treatment for puerperal septicæmia.

DR. J. A. DOLÉRIS, of Paris, after referring in flattering terms to the papers just read, said that he wished to emphasize the precepts of Dr. Earle's paper. He had practised curettement of the puerperal uterus as late as the fourteenth day, with excellent results.

PROF. RODNEY GLISAN, of Portland, Oregon, read a paper on

CONSERVATIVE OBSTETRICS; WITH SPECIAL REFERENCE TO THE REMOVAL OF THE SECUNDINES AFTER ABORTION, AND TO THE TREATMENT OF THE THIRD STAGE OF LABOR.

He thinks that the expectant method of treating re-

tained secundines after abortion, and of the placenta in labor, is unsafe in private practice, especially when the doctor resides at a distance from his patient; yet it may succeed fairly well in hospitals under the constant vigilance of experienced practitioners. He believes that the heroic method of always removing the secundines in abortion immediately after the expulsion of the embryo, and of the placenta immediately after the birth of the child, is in private practice safer than the do-nothing mode because there is less danger of hemorrhage and septicæmia, yet he prefers a conservative method to either of the others.

In an active practice of thirty-nine years Prof. Glisan has never found any instrument for the removal of the secundines after abortion so safe, useful, and trustworthy, as the finger. He adopts the bimanual method of abdominal depression of the uterus with one hand to within easy reach of the index finger of the other; and then inserting the latter finger far enough into the womb to seize the secundines and remove them. In cases of excessive sensibility, or great abdominal rigidity, or of undilatability of the cervix, he administers an anæsthetic—either chloroform, or a combination of it and ether—except when the patient is anæmic from hemorrhage, when ether alone is used,

In the removal of the placenta during labor he adopts a modified or conservative Credé method. That is, he advises pressure to be made on the fundus of the womb in somewhat the manner recommended by Credé, and with his precaution of using force only during the acme of uterine contractions, but he would use less pressure than is advised by Credé, and aid it by moderate traction on the cord, to which Credé is strongly opposed.

Dr. Glisan does not believe that moderate traction on the cord, when the womb is in a state of good contraction, and is properly grasped by one hand externally, is attended by the least risk of inversion of the uterus, or of increasing the hemorrhage by a suction-like process of the placenta on the cavity of the womb.

Dr. Graily Hewitt, of London, said that he believed it was most important in the treatment of abortion to remove the secundines, but that he had observed that early in the abortion the internal os was often very narrow. In such cases a little time should be allowed before attempting manual extraction. For removal, the finger was best, coupled with depression of the uterus from the outside.

Dr. John Bartlett, of Chicago, presented

A STUDY OF DEVENTER'S METHOD OF DELIVERING THE AFTER-COMING HEAD.

He pointed out evidences in the writings of Deventer that he practised a method of delivering the after-coming head, which he regarded as easier, and safer for mother and child, than other methods. This method, as described and practised by Smellie, shows it to consist of a reversal of the so-called Prague method, in that the body of the child is carried backward toward the perineum, with a view of turning the occiput out from under the pubes; the anterior surface of the neck resting on the perineum.

Professor Simpson, of Edinburgh, said he regarded the great Dutch obstetrician as one of the most reliable obstetric writers, whose statements as to his success in practice he accepted without reserve. It is an interesting illustration of the importance of the relative study of the works of contemporary writers that it was from the works of Smellie that Dr. Bartlett has been able to unearth Deventer's secret.

Dr. A. F. A. King, of Washington, D. C., said that the method of Deventer had been overlooked by modern writers. The method of traction downward and backward toward the perineum is generally recommended when the occiput has rotated posteriorly and the chin pole is below the pubes, but it is generally advised to deliver the arms first. He would take pleasure in trying Deventer's method, and would recommend it as a legitimate procedure.

Diseases of Children.

THURSDAY SEPTEMBER 8TH.

Dr. Albert R. Leeds, of Hoboken, N. J., read a paper on

THE SCIENTIFIC BASIS OF THE NUTRITION OF INFANTS.

He said that he desired to engage the attention of the Congress upon this subject, both on account of its intrinsic vital importance, and because he believed that the existence of a scientific basis for the nutrition of infants has been satisfactorily established. This paramount importance is shown by the fate of infants under present conditions of nutrition: out of every 100 infants fed on mother's milk, statistics show that about 8 die at the end of the first year; out of 100 wet-nursed, 18 die; and out of 100 fed on "infant foods," 51, or more than one-half, die by the end of the first year.

In an investigation made in 1883 upon all infant foods then in use (*Transactions of the College of Physicians of Philadelphia*, 1883), he found that all these foods, whatever might be their name or pretensions, belonged to one or the other of two great classes; they were either flour, plain, baked, or cooked, or they were sugar admixed with cereals in some form, the so-called Liebig's foods. The cause of the great mortality among infants using these foods is obvious—they are physiologically as unsuited to the nutrition of a human infant as grass and hay are to the nutrition of a calf deprived of cow's milk.

All the varieties of "infant foods" are intended to prevent the formation of hard clots by keeping asunder the particles of caseine by means of starch, dextrine, sugar, etc.

Four years ago he proposed that we should abandon artificial foods altogether. He prepared for infants deprived of mother's milk, milk to which he gave the name of "humanized," since it was, as far as could be ascertained, the same in composition and properties as mother's milk. As a foundation for this work he made analyses of eighty samples of mother's milk. They varied greatly in composition with the age, temperament, physical health, etc. of the mother. But when their average composition came to be compared with that of cow's milk, certain facts stood out very prominently. They were: first, that the amounts of sugar and fat in mother's were much greater than in cow's milk; second, that the caseine was much less; third, that the nature and proportions of the ash were not the same. But the most important difference was in the

different digestibility of the caseine of the cow's milk. At the time that he was engaged upon this research, the treatment of cow's milk with artificially prepared pancreatic extract in order to convert the caseine into a soluble peptone, was being largely resorted to. He was aware of this fact, and of the experiments of Dr. Roberts, of England, upon this subject. But at that time, no one, so far as he is aware, had studied the relative character of such peptonized caseine and the caseine of mother's milk. On making such an investigation, he found that in properties and tests the two bodies behaved in precisely the same manner. Finding that the distinguished pharmaceutical chemist, Mr. B. T. Fairchild, could prepare a tryptic ferment which could be relied upon with certainty to effect the desired change in cow's milk, he made this tryptic ferment the basis of the so called peptogenic powder. By diluting cow's milk with the requisite quantity of water, its percentage of caseine is lowered to the same amount as in mother's milk. By the addition of cream, the percentage of fat is adjusted, and the heating of the milk for five minutes with the peptogenic mixture does the remainder. The "humanized milk" thus prepared has already been the sole nutrition of many thousand infants, especially children of weak and disordered digestion, and he believes it to be a successful solution of the problem of infant nutrition.

General Medicine.

FRIDAY, SEPTEMBER 9TH.

SIR JAMES GRANT, of Canada, then made some remarks on

THE TREATMENT AND ETIOLOGY OF DIPHTHERIA.

He regards it as a blood disease, and therefore always directs that the patient be given each day a warm bath with mustard in it. The irritation of the skin draws away the blood from the throat where it would enter, and thus relief is obtained. He has noticed in Canada that in the winters in which a heavy fall of snow occurs the disease is rare, as it is also in the following summer; but if the snow-fall is light and the winter damp, then the disease is rife both in the winter and summer.

He has also noticed the fact that convalescents from diphtheria do better in hilly regions than at the seashore, and in sending such persons away to recuperate he always insists on the high lands.

The Section passed a vote of thanks to Sir James Grant for his interesting remarks.

DR. A. B. PALMER, of Michigan, had used pilocarpine for the same purpose for which Dr. Grant had used baths.

DR. JOHN A. OCTERLONY, of Louisville, read the report of the Committee which was appointed to investigate the statements made by Dr. Joseph Kaposi, with reference to the

ANTI-VACCINATION STATISTICS

of Keller in Austria. The most astonishing statement in the report of Keller was that in children, under one year of age, vaccination produced no result at all, as the mortality of unvaccinated was 13.25 per cent., while that of the vaccinated was 13.50 per cent. When Kaposi undertook the review of Keller's statistics, he had no idea that they had been falsified; but before he had finished, he encountered some very surprising results. Summoning Dr. Keller to Vienna to testify in regard to his statistics, he found that Keller had died shortly before, and that no statistical tables had been found among his effects. The correctness of this statement has been verified. Kaposi then addressed himself to the railroad surgeons and asked them for duplicates of their reports to Keller. Of the nineteen surgeons of the company who were living, nine responded by furnishing the desired duplicates. 549 cases were thus found. The duty of the surgeons of the road was to report, during an epidemic of smallpox, whether the patients had been vaccinated and whether they had been revaccinated. This was to be done with the greatest care, as to age, etc.; in children under one year, for instance, the exact age in months was to be given. Notwithstanding the care with which these reports had been prepared and transmitted to Keller, his report contains no reference to the number of patients who had been revaccinated.

As a result of their investigations, the Committee arrived at the conclusion that Keller had altered the statistics of his physicians, which he should have carefully compiled. He had in all instances changed the figures in such a way as to raise the number of deaths of vaccinated and lower the number of deaths of the unvaccinated.

DR. A. B. ARNOLD, Chairman of the Section, then made some remarks on

DILATED AND FATTY HEART.

The etiology, pathology, symptomatology, diagnosis, and treatment were considered in their order. Some cases are congenital, where young persons have been found to have a fatty degenerated heart, much dilated. Insufficiency of one or other of the valvular orifices of the organ is a much more frequent cause, being most frequent in persons past the middle period of life. Fatty degeneration may follow insufficiency of either of the orifices. Digitalis is the remedy most relied upon in the treatment of this condition. Strychnia, too, is a most excellent remedy; but in order to obtain its full effects, it must be given in much larger doses than are usually administered. Beginning with the usual dose, one-sixtieth of a grain, it should be gradually increased until probably a one-sixth grain dose is reached—almost until physiological effects can be noticed.

DR. LYNCH, of Baltimore, cautioned against permitting too free exercise by those afflicted with fatty degeneration of the heart. With regard to the use of digitalis, he said that we can with it keep off the fatal termination of the disease for a time, but, finally, a time comes when it loses its effect and nothing will longer sustain the heart. It is also advisable in these cases to diminish to the minimum the quantity of fluids taken, in order to render the proportion of red blood-corpuscles relatively greater than otherwise.

DR. GEORGE E. FELL, of Buffalo, N. Y., then read a paper on

FORCED RESPIRATION IN OPIUM POISONING.

Artificial respiration has a wider range of application than might at first be supposed. It has been used in drowning, strangulation, occlusion of the air-passages, poisoning by carbonic acid gas, chloroform, opium, or

its alkaloids, strychnia, woorara, snake bite, in hemorrhage, and even in nervous shock from a blow or fall. Of the methods, a few may be mentioned, as those of Marshall Hall, Sylvester, Howard, and others, which depend for their success upon the movements of the limbs of the body of the patient, supplemented usually by pressure on the part of the physician.

We have further the methods in which tubes and mouth-pieces are used, and the air supplied by means of bellows of various forms.

Then, again, we have the methods used in physiological laboratories, in which the trachea is opened, to supply the air for respiration. The first of this series of methods is that generally used, and may be useful so long as the muscles of respiration maintain their tonicity and the heart has not ceased to beat. The second series, in which mouth-pieces are used, may prove uncertain in action, owing to the difficulty of passing air into the paralyzed larynx with the œsophagus presenting a more direct route to the stomach. The third series presents a positive method, by opening into the trachea.

To the latter method he applied the name of forced respiration, to distinguish it from the ordinary "artificial" respiration. After a considerable review of the best medical works and consultation with the most prominent members of the profession of Buffalo, the essayist had not been able to find a case in which forced respiration had been applied to the human subject under opium poisoning. The value of the method, the essayist thought, would be apparent after the recital of a case.

On Saturday, July 23, 1887, at 12.30 A.M., he was called to attend a patient whom he found in a semi-comatose condition. The patient, as he was informed by his wife, had been drinking heavily for a week or more, and in order to secure sleep had taken chloral. Finding this inefficient as taken, he had resorted to a dose of morphine. The quantity he had taken was equal to twenty grains. The symptoms produced were those ordinarily following a large dose of the drug. Dr. Fell at once administered an emetic, followed it by a cathartic, and commenced giving him drop-doses of the fluid extract of belladonna at frequent intervals, until a solution of atropia could be obtained. This he then administered hypodermatically in doses of one-sixtieth of a grain. In order to keep him awake, the patient was walked around. This was continued until finally his strength failed, and he sank to the floor exhausted. His breathing now become more stertorous than before, and signs of immediate dissolution were present. Thinking he could do no more the essayist abandoned his efforts at about 4 A.M. Four hours later, he was called by a physician who had been subsequently summoned to the case. He found the patient breathing with little more ease than when he left, but exceedingly weak. Sylvester's method of artificial respiration was resorted to, and continued at frequent intervals for an hour. The patient's strength continued to fail. Finding it impossible longer to keep up the patient's respiration, tracheotomy was performed. The steps of the operation were described by the essayist. A heavy tube was inserted, one which had done service upon dogs in the physiological laboratory. The apparatus used in experiments was also employed to produce artificial respiration. In a short time, natural efforts at respiration commenced. It was soon observed, however, that after the forced respiration had been continued for awhile, the natural efforts were suspended for a time—in other words, that the supply of oxygen provided to the patient in this manner was greater than that required by nature, and the blood became overcharged with oxygen. The large laboratory tube was then removed and an ordinary tracheotomy tube inserted.

He then described a smaller apparatus which he had had prepared for the purpose of producing forced respiration in the human subject, and closed with the statement that the method was not only easy of execution, but one suited to a large number of cases, the only restriction to it being the danger of over-inflation of the lungs.

Dr. Brainard, of Los Angeles, California, stated that he had used the method of producing artificial respiration by strongly elevating the shoulders, by raising the arms and compressing the chest in order to secure expiration. He had found it efficient in every case, and had not felt the need of any such method as that just described. In some cases the tongue must be held forward in order to prevent its closing the entrance into the trachea.

Dr. Fell stated that he had not proposed forced respiration as a method applicable to every case, or as a substitute for artificial respiration. He had used Sylvester's method with success in some cases, and, as stated in the paper, had employed it in the commencement of the case reported, but in cases of opium poisoning, as in this case, a time comes when Sylvester's method will no longer be effective. He did not advocate opening the trachea, itself a serious operation, when the patient can be saved in any other way; but when all other means have failed is the time to resort to forced respiration.

Dr. Entrikin stated that he did not wish to belittle the operation just reported, but that he had succeeded in several cases in producing artificial respiration by introducing an ordinary rubber tube into the trachea and forcing air through it by means of a bellows.

The Chairman then expressed in a few words his gratification with the success of the Section, thanking the members who had so kindly contributed to the scientific work done, and declared the assemblage adjourned.

Obstetrics.

Friday, September 9th.

Dr. Ira E. Oatman, of Sacramento, Cal., read a paper on

the treatment of puerperal eclampsia.

He recommended the use of veratrum viride after the convulsions are under control by anæsthetics. Eight drops per os or fifteen per anum should be exhibited until the frequency of the pulse beat is reduced to forty, and nervous and vascular tension is relieved. He believes this drug to have a specific effect. Whiskey must be kept near in case of extreme cardiac depression.

Dr. Duncan C. MacCallum, of Montreal, said that eclampsia should not be treated as an entity, in which the conditions are always the same, but as a disease occurring under widely varying conditions, which confer an individuality on each case. He relied on chloro-

form, morphine, chloral, and the bromides. He had seen sixteen cases; all recovered.

DR. A. F. A. KING, of Washington, said that the normal presentation and position of the fœtus *in utero* during pregnancy, before labor begins, is the dorso-anterior position of an oblique presentation. Pressure of the gravid womb upon the aorta, vena cava, and their branches produced renal trouble. He recommended, in the treatment of eclampsia, postural treatment. Place the woman in the knee-elbow position, or the latero-prone position of Sims, and then by manipulation lift the womb out of the pelvic cavity and place it upon an iliac fossa, where it ought to be naturally.

DR. AUST. LAWRENCE, of Bristol, England, expressed suprise that in America all cases of eclampsia apparently recovered. In England, the affection was extremely fatal.

DR. W. W. JAGGARD, of Chicago, said: 1st. Puerperal eclampsia was caused by renal inadequacy, to use an expression of Sir Andrew Clarke's, dependent upon functional or organic disease. 2d. The immediate cause of the convulsion was, probably, vasomotor spasm of the cerebral bloodvessels. 3d. The indication for treatment, *par excellence*, was profound anæsthesia, to relax the spasm. Therefore, chloroform, morphine, chloral, and the bromides were indicated. Joseph Berens and H. C. Wood, of Philadelphia, had demonstrated that veratrum viride produced general vasomotor paralysis and diminution of the general blood pressure. There were, therefore, *à priori*, considerations, in favor of the use of the drug. Niemeyer says, "You bleed the patient into her own veins when you exhibit veratrum viride." 4th. He had read Dr. King's remarkable paper, of which mention had been made. He thought his arguments fallacious, and utterly inconclusive. Certainly, in the present state of our knowledge, it would be supreme folly—worse than folly—to lift up the head out of the pelvic cavity and place it on an iliac fossa, if that were possible. He was of the opinion that the observations, upon which Dr. King based his hypothesis, did not correspond with the objective findings of the immense majority of observers.

DR. E. PAUL SALE, of Aberdeen, Miss., read a paper on

THE MANAGEMENT OF PREGNANCY, WITH REFERENCE TO THE PREVENTION OF POST-PARTUM HEMORRHAGE,

in which he recommended viscum flavescens, stylosanthis elatior, aletris farinosa, cimicifuga racemosa, salix nigra, as uterine tonics, in cases predisposed to hemorrhage, the result of atony or the hemorrhagic diathesis.

Gynecology.

FRIDAY, SEPTEMBER 6TH.

The session was opened by a discussion of some of the papers of the preceding day.

TREATMENT OF THREATENED OR COMMENCING PERITONITIS AFTER LAPAROTOMY BY BRISK PURGATION.

DR. GORDON, of Maine, fully endorsed Dr. Johnson's plan of purging in peritonitis, following laparotomy, having been strongly influenced in his opinion by the recommendation of Tait. He had also used this plan successfully in the treatment of puerperal fever, salines being the agents used to produce the purgation. He considered that the day for the opium treatment of peritonitis had passed.

THE BURIED SUTURE WITH IODOLIZED SILK IN VESICO-VAGINAL FISTULA.

DR. CUSHING, of Boston, remarked that he had no experience with that form of suture material, but frequently found occasion to use the buried suture. In many instances, they served an excellent purpose, especially when some soluble material, such as catgut, was used.

THE TREATMENT OF UTERINE CANCER.

DR. A. MARTIN, of Berlin, said that his method of operation, in brief, is as follows: The patient is placed upon the back, the vagina thoroughly disinfected, and the sides of the vagina and the perineum are retracted. The cervix is grasped with a volsella and dragged to the vaginal entrance, at the same time carrying it as high as possible toward the symphysis pubis. The posterior vaginal fornix and peritoneal pouch are then cut through, the peritoneum is drawn down and stitched to the vagina; a ligature is then passed which includes the lower third of the left broad ligament, after this another which includes the upper and middle thirds. The same procedure is next adopted with the right broad ligament. The anterior vaginal fornix is then opened, the bladder carefully separated, and the edges of the peritoneal and vaginal wounds stitched together as they were, posterior to the uterus. The organ is then retroverted, the body of it being brought into the vagina. The lateral attachments are next divided and the peritoneum stitched to the vagina as in the previous cases. A catheter is then passed into the bladder to draw off its contents. During the entire operation the wound is irrigated, no sponges being used. He considers that this operation has now passed its stage of trial in Germany. The best operators insist upon limiting the operation to those cases in which the uterus alone is involved by the disease. The operation is also indicated in certain cases of prolapsus uteri, and occasionally for myomata. It is also called for in sarcomata and adenomata. The prognosis from the operation is favorable if the surrounding tissues are healthy, but if infection has taken place the result will probably be unfavorable.

DR. DIARNY, of Buda Pesth, had had some experience with this operation as Prof. Tauffer's assistant, the latter having had a large series of successful operations. He thought Dr. Jackson's argument in regard to loss of life in years by those who had submitted to hysterectomy and had subsequently succumbed from recurrence of the disease, death having come more quickly, in all probability, than would have been the case had they submitted to no operation whatever, but allowed the disease to take its own course, was a kind of argument which was unwarrantable and quite insusceptible of substantiation. On the other hand, he might also mention the great gain to the patients in relief from pain, exhausting discharges, and offensive presence even if this respite were to last only a few months. He believed

that the operation was fully warranted whenever here was a reasonable possibility of removing all th diseased tissue.

Dr. Dudley, of Chicago, thought that the status of American operators with respect to the operation would improve with increased experience.

Dr. Graily Hewitt, of London, considered that humanity owed a debt of gratitude to Martin and his colleagues for their pioneer work in this field.

Dr. Reeves Jackson, in closing, still believed that the facts were against vaginal hysterectomy as a justifiable operation. While according all merit to Dr. Martin and his colleagues for their great skill in operating, and admitting the possibility of even better results in their hands, the operation was not one, however, which could be done with satisfactory results by the average gynecologist.

Dr. Trenholme, of Montreal, offered a resolution moving the thanks of the foreign delegates to this Congress, to the officers thereof, and the citizens of Washington for their hospitality, and to the Chairmen and Secretaries of the Sections for their untiring labors which had done so much toward accomplishing the success which had attended the sessions of the Sections.

This motion was seconded and carried unanimously.

Dr. Caleb R. Reed, of Ohio, read a paper on

the intrauterine stem pessary as an emmenagogue.

This method of treatment had been condemned by Emmet and others, while Thomas, Goodell, Mundé, Reeves Jackson, Winckel, and others approved of it. The plan of the author in dysmenorrhœa or amenorrhœa was to use a tent of slippery elm, and the irritation and dilatation thus produced were often effective in bringing on a flow which answered all the purposes of the menstrual flow, whether occurring at the time which was appropriate in the given case or not. The method had never been accompanied by bad results in the author's experience.

The work of the Section was closed with the reading by title of a number of papers.

AMERICAN GYNECOLOGICAL SOCIETY.

Twelfth Annual Meeting, held at New York, September 13, 14, and 15, 1887.

(Specially reported for The Medical News.)

(Concluded from page 370)

Thursday, September 15th.

Morning Session.

The adjourned discussion of Dr. Bantock's paper on

the treatment of the pedicle in supravaginal hysterectomy

was next in order.

Dr. Martin, of Berlin, said that the chief danger from the intraperitoneal treatment of the pedicle was hemorrhage. Hegar and Kaltenbach, in Germany, practised the extraperitoneal method. The reader learned the details of the operation from Péan, but it was thought that hemorrhage should be controlled during, as well as after, removal of the tumor. This was effected by means of the India-rubber tube, which he was the first to introduce. After excising the tumor, his practice was to excise a wedge-shaped mass from the centre of the stump, and to bring the opposite surfaces together by means of superficial and deep catgut sutures. In this way bleeding was perfectly controlled. The statistics of supravaginal excision presented by Hegar and Kaltenbach were always referred to in support of the extraperitoneal method. A certain number of patients died of sepsis; this might occur whether the pedicle was within or without the abdomen. Many patients died from circulatory disturbances, as thrombosis and embolism; others from excessive hemorrhage. Undoubtedly the bad results from intraperitoneal treatment of the pedicle were frequently observed in the most severe cases, which were hopeless anyhow. By dropping back the pedicle, the parts were restored to their normal position. Statistics were not yet sufficiently extensive to warrant positive deductions. The great advance in ovariotomy had been made by Sir Spencer Wells, who originally fixed the pedicle outside, but the still greater advances of recent times were made since the pedicle was dropped back. Dr. Bantock had admitted that the ideal method was to drop back the pedicle; we should try to improve this method, and to perfect it until it was free from its present imperfections. The author stated that up to 1887 he had operated eighty-four times; eleven per cent. died of sepsis, and seventeen per cent. from hemorrhage and embolism. Among the last thirty, ten per cent. died.

Among the author's cases one was mentioned in which the pregnant fibroid uterus was removed. The speaker enucleated subperitoneal tumors in such cases, but did not perform amputation, and had in two or three instances saved both the mother and child.

Prof. Simpson, of Edinburgh, had seldom found it necessary to resort to the surgical treatment of fibroid tumors. It was impossible to say that there was any fixed plan of treating the pedicle suitable to all cases; each must be treated according to the necessities of the case. The clamping of the pedicle occupied less time than the preparation of the stump as described by the last speaker. Time was an important consideration in these operations. In one instance he was obliged to drop the stump back, as he had no clamp large enough to encircle it. The patient died on the fifth day, of septicæmia. He did not agree with Dr. Bantock as to not applying iron to the stump, since he had used the dried persulphate with satisfactory results.

Dr. Gardner, of Montreal, had operated five or six times, using the serre-nœud in every instance. He had seen no reason to adopt any other method. The extraperitoneal treatment had certainly furnished the best results thus far.

Dr. H. Marion Sims had always treated the stump extraperitoneally. His father had invariably met with bad results in the intraperitoneal method. The speaker had lost only two out of eight cases.

Dr. Mann, of Buffalo, had tried the intraperitoneal method in one out of six cases, and was obliged to re-open the abdomen on account of hemorrhage; after that he had left the pedicle outside. All the patients recovered. He treated the stump with iodoform, and found that it remained dry for a week or ten days.

Dr. Van de Warker, of Syracuse had had four

cases; in two the stumps were treated intraperitoneally, in the other two they were clamped. One of the former patients died. In one instance, where the pedicle was included in the wound, a raw surface remained for a long time, necessitating a secondary plastic operation.

Dr. Bantock, in closing, expressed great satisfaction at the fact that Dr. Martin was present to discuss his paper, and said that he was gratified to find that while his own mortality was 12 per cent., Dr. Martin's was nearly 25 per cent. Statistics alone were not enough; the main point was that among the speaker's fatal cases, there were much fewer deaths from septicæmia. The intraperitoneal method was much more attractive but was none the less dangerous. The ideal method had not yet been found. He believed that it was a mistake to apply any astringent to the stump; if the serre-nœud was properly tightened, it would remain dry. The septic trouble began *below* the loop, hence the peritoneum must be accurately attached around the pedicle.

Dr. R. Battey, of Georgia, read a paper entitled

BATTEY'S OPERATION: ITS MATURED RESULTS.

Alluding to the fact that he had ten years before presented a paper on the proper field for the operation, the reader said that when he first determined to perform it in 1872 he felt that it was a bold step, which must result either in the establishment of new principles in surgery, or in his own disgrace and professional ruin. The account of the first operation was published in 1872 and was widely read. The first recognition of the operation in Great Britain was by Prof. A. R. Simpson, of Edinburgh, who published, in 1879, the report of a case of double oöphorectomy. Mr. Tait had claimed some connection with Battey's operation soon after in an alleged conversation with Dr. Chadwick, in 1873, which conversation the latter was unable to recall. Hegar published, in 1878, the report of an unsuccessful operation which he had performed in 1872. Now numerous operations were reported from all parts of the country, but these reports were defective, in that the patients were not kept under observation sufficiently long after the operation. Since his work had been purely private, he had been able to keep the cases under observation for many years. He had preferred to retain the term "Battey's operation," since it expressed the object of the procedure (the production of the menopause) better than the terms "oöphorectomy," "spaying," "castration," etc.

He here presented a table showing the results in 54 cases of Battey's operation; 33 were cured and 8 much improved, 5 little improved, and 8 were not at all improved. The menopause was produced in 50 cases, while in 4 pseudo-menstruation persisted. Several of the cases were read in detail.

The following were his conclusions:

1. The change of life was a most important factor in securing the complete results of the operation.

2. In a few cases a cure occurred at once, but in the majority the patient passed through various climacteric disturbances.

3. The time which elapsed between the operation and the disappearance of these disturbances varies from one to three, or even five, years.

4. Some of the cases reported were badly selected and should not have been operated upon.

5. Patients addicted to morphine and other narcotics must abandon the habit in order to be perfectly cured.

6. Cases proper for operation, if allowed to suffer for years unrelieved would reach a stage when they would become incurable.

7. In a few cases intractable neuralgia in the stump developed after operation, and resisted all treatment.

8. A careful analysis of the cases showed that the removal of the Fallopian tubes did not appear to influence the production of the menopause or the final cure.

9. The operation was not infallible, the percentage of failures was large, but not more so than in many other operations in surgery, notably those for the cure of cancer of the uterus.

Dr. Sutton asked Dr. Battey if we were to understand that his operation was confined to the removal of the ovaries *alone*, and that the menopause was produced by the extirpation of the ovaries alone.

Dr. Jackson commended the modesty of Dr. Battey, and called attention to the uselessness of oöphorectomy statistics issued a week after the operation.

Dr. Parvin wished to know how frequently the tubes and ovaries had been removed in his operation.

Dr. Howard alluded to the necessity of having some clear rules to guide in the performance of Battey's operation.

Dr. Lloyd Roberts asked Dr. Battey to tell what the condition of the uterus was in his cases.

Dr. Howard Kelly, of Philadelphia, said that his results in Battey's operation had been invariably satisfactory after the lapse of two or more years.

Dr. Polk said that it was highly important to have an exact definition from Dr. Battey. Surgeons wished to know where they stood in this matter. What was the condition of ovarian disease that demanded removal of those organs? As regarded tubal disease, the indications were becoming clearer. We know no more regarding the exact amount of ovarian disease that demanded removal than we did fifteen years ago.

Dr. Bantock said that he had always been under the impression that "Battey's operation" was synonymous with "normal ovariotomy."

Dr. Simpson said that the patient on whom he had operated in 1879 had been much improved as regarded menstrual pain, but that she was not yet a healthy woman. Some of Dr. Battey's patients had been entirely restored.

Dr. Battey said, in conclusion, that the removal of the ovaries was not a necessary element in Battey's operation; the change of life was the thing aimed at, not removal of the ovaries. The same result might be accomplished by simply ligating the ovarian vessels as proposed by Prof. Simpson. Removal of the ovaries, tubes and ovaries, or even of the entire uterus and its appendages, did not always bring on the menopause. The ovaries were invariably diseased in his experience. He removed the tubes whenever they were diseased; the ratio of tubal disease (pyo- and hydrosalpinx) was small. If the tubes were not diseased he removed the ovaries alone.

In reply to Dr. Polk, he said that he *did not operate for disease of the ovary*, that was a secondary matter. In many cases if we could stop ovulation, the patient would get well. He had never insisted on the necessity

of the existence of visible disease in the ovaries in order to justify their removal.

In reply to Dr. Bantock he said, that he was glad that the question had been asked, for he had tried for fifteen years to make foreign surgeons understand the scope of the operation. In 1881 he had read a paper before the International Medical Congress, repudiating the term "normal ovariotomy," yet only last year Sir Spencer Wells had thrown the expression in his face.

Dr. A. W. Johnstone, of Danville, Ky., read a paper on

THE INFANTILE UTERUS.

He said that the relation of the cervix uteri to the body was similar to that of the pylorus to the stomach; this idea was borne out physiologically by the anatomical difference in the blood supply, the direction of the muscular fibres, and the mucous membrane. The mucous lining of the cervix resembled that of the air-passages, its function being simply to secrete defensive fluids, especially the mucous plug of pregnancy, wherein it differed widely from the mucous lining of the body of the uterus. Clinical observations served to corroborate the theory that the cervix and body were practically two distinct organs; thus, the latter might be perfectly normal while the former was diminished in size. The reader believed that a large proportion of the cases of so-called congenital flexure were due to the non-development of the cervix, which caused that form of dysmenorrhœa which was cured by instrumental dilatation. Moreover, it would be found that this infantile condition of the cervix was especially favorable to the production of laceration. The endometrium was, in his opinion, not a mucous membrane, but it belonged to adenoid tissues. It had entirely separate nerve plexuses which entered it at the cornea, coming from centres in the broad ligaments. If development of this tissue was arrested at any point, the result was an infantile uterus. Traumatism was especially liable to bring about this result.

The reader referred to his studies on the innervation of the uterus. He had found that on each side of the uterus there was a large nerve which entered the cornu just below the insertion of the Fallopian tube. He believed that this nerve presided over the functions of the endometrium. Unless these nerves were divided close to the uterus during the removal of the appendages, the menopause would not be induced also, though both tubes and ovaries were removed. The reader summarized as follows:

1. The uterus was not only an independent organ, but consisted of two parts whose functions were entirely separate, and the growth of either one of which might be arrested.

2. From its exposed position the growth of the cervix was more apt to be interfered with than that of the body.

3. Congenital flexions were largely due to this arrest.

4. If the growth of the body was arrested, the development of the endometrium was interfered with, and sterility resulted; there was probably some lesion of the pelvic sympathetic in these cases.

5. If the body was markedly undeveloped, nothing was accomplished by dilating the cervix.

6. If life had become a burden the premature menopause should be produced by dividing the trophic nerves, as before mentioned.

Prof. Simpson took exception to the author's inference that the ovary alone was supposed to dominate the uterus; it should not be forgotten that the tube also shared in this. It was important to distinguish clearly the difference between the cervix and corpus uteri, but it should not be forgotten that it was only after puberty that the true difference appeared.

Dr. Johnstone, in closing, said that ovulation might occur after the menopause, but the mucosa was not then under the dominant influence of the ovaries. The tubes did not dominate the uterus. He did not know where the nerve-centre of the uterus was, he only claimed that one of its largest trunks was situated just below the Fallopian tube.

Dr. T. Parvin, of Philadelphia, read a paper on

THE IMPORTANCE OF ANTISEPTICS IN PRIVATE OBSTETRIC PRACTICE.

He said that, while no one could question the utility of antiseptics, in private practice there was carelessness about using them. This was due to the incredulity of many with regard to the septic origin of puerperal fever. Women who were delivered at home should be just as carefully attended to as in maternities. Many septic affections were overlooked, because the patients did not die. An entire absence of sepsis in 500 cases of confinement did not prove that a practitioner enjoyed perfect immunity. Health returns were not always accurate. Even if one man was successful without using antiseptics, another might be misled into following the other's example with disastrous results. The puerperal practitioner was always liable to carry infection from surgical and infectious cases, and especially from autopsies. The day was coming when a physician, who lost patients from the neglect of antiseptic precautions, could escape neither the reproach of his own conscience, nor public censure. He showed a pocket-case which he had devised for carrying in a small space, various antiseptic instruments and sutures for repairing lacerations, etc.

Dr. Lawrence, of Manchester, was disappointed that the author had not described his method of using antiseptics. He always had a warm carbolized injection given during the course of the labor, and introduced afterward an iodoform pessary night and morning. The mortality in private practice must be less than in the best hospitals.

Prof. Simpson recommended turpentine as an antiseptic wash for the hands. It removed all the noxious fatty acids. Then the hands were washed with soap and water.

Dr. Reed, of Glasgow, said that during the past seven years he had always used antiseptics before examining women. He made use of glycerine soap and carbolic acid (five per cent.) as a lubricant after cleansing the hands.

Dr. Kelly said that in his own practice he had carried bichloride in gelatine capsules, seven grains in each. In order to avoid contamination from the bed he used a large inflated rubber or pad of a crescentic shape, having a piece of rubber cloth beneath it, which was prolonged below the ends of the crescent so as to fall over the side of the bed. It was very convenient in obstetric operations.

EXTRAUTERINE PREGNANCY AND ITS TREATMENT BY ELECTRICITY.

DR. ELY VAN DE WARKER, of Syracuse, reported a case of extrauterine pregnancy in which growth of the fœtus was arrested by means of the faradic current. The diagnosis was rendered certain by the history of suspended menstruation, the presence of irregular discharges of blood from the uterus, and the passage of a characteristic decidual membrane, while the patient suffered with attacks of agonizing pain in the abdomen. On examination a characteristic tumor was felt on one side of the uterus. Electrical treatment was entirely successful. Referring to the comparative certainty with which extrauterine gestation could be diagnosticated at the present day, the reader urged the use of electricity as affording less risk to the patient than laparotomy, while it almost invariably arrested the progress of pregnancy.

DR. REEVE, of Dayton, referred to a case of extrauterine pregnancy which he had formerly presented to the Society. The expulsion of the decidual membrane added to attacks of violent pain and gushes of blood formed a picture which was hardly mistakable. But, the decidua could not always be found, since it was discharged a little at a time. The fact of a probable pregnancy should first be established. The tumor was a growing one, hence time would always clear up the diagnosis.

We did not know as yet just how long electricity should be used. There was only one reasonable way and that was to keep on until it was pretty certain that the vitality of the cyst was destroyed.

DR. SIMS said that he had treated a case of extrauterine pregnancy four years before, and had recently seen the patient, so that he was sure of her present condition. Dr. Rockwell had passed the interrupted galvanic current from fifteen cells, the patient being under ether. Fifteen severe shocks were given and eight or ten séances were held. After this the tension of the sac was clearly diminished, and the tumor gradually decreased in size. Now, nothing could be felt but slight induration at the site of the tumor.

DR. CHADWICK said that it was important to lay down clear rules as to the recognition of these cases. In all the reported cases up to a year ago, there was not a single one in which there was *certum* evidence of the existence of a fœtus. The reader had used electricity every day for three weeks in a recent case. Five weeks after he had dismissed the patient she passed a portion of a fœtus by the vagina, thus establishing the diagnosis positively. We could not depend on any one symptom in making a diagnosis. The examination of the decidua surely showed that it was the decidua of pregnancy. The reader in his case passed a sound to the depth of four inches into the uterus and thus proved that the organ was larger than it would have been if the case had been one of early abortion, as was first supposed.

DR. MARTIN, of Berlin, had operated on sixteen cases of extrauterine pregnancy. In Germany it was customary to operate at once. The attempt to kill the fœtus was a very old idea. Morphine had been injected into the sac with successful results. Electricity had also been used in Germany with success. What became of the ovum? It was often mummified and did not harm. Was it safe to allow the fœtus to go on growing? There had been difference of opinion in Germany, but now it was conceded that it should not be permitted to go on. Electricity was not popular.

Tubal pregnancy was the most common form, and could be easily diagnosticated and operated upon in the early stages. He had removed a living child; he found no difficulty in dealing with the placenta, since he readily extracted it at the time. He did not believe in leaving it behind to become a large sloughing sac.

DR. APOSTOLI, of Paris, had been greatly interested in the paper. He thought that the electrical treatment of this condition had met with great success. Both currents had been used in France; he had met with better results in using the constant current, since the latter had succeeded where the faradic had failed. It might be applied to the interior of the uterus, or galvano-caustic puncture of the sac might be made through the vagina and a current of fifty milliampères might be passed. The fœtus would be killed in a few seconds.

DR. MANN said that he had long been interested in the subject. Could we make a diagnosis in the early stage of pregnancy? Undoubtedly, at least in this country. Dr. Martin had testified to the fact that the diagnosis was frequently made in Germany. The electrical treatment was better than laparotomy, because it was not so dangerous in the hands of the general practitioner. Very few cases had proved fatal, except where the sac had been punctured. Then if electricity failed laparotomy could be performed without added risk.

DR. JANVRIN referred to a case of tubal pregnancy in which the patient died from hemorrhage after three applications of electricity. Dr. Rockwell had placed the positive pole over the surface of the abdomen, the negative within the vagina. The current varied from twelve to sixteen cells (eighteen to twenty milliampères). He thought that the fœtus was killed at the first application. He was convinced that the colicky pains and symptoms of shock were due to the rupture of vessels in the peritoneal covering of the sac. Hence, he believed in performing laparotomy as soon as these symptoms appeared.

DR. VAN DE WARKER said, in closing, that there was no well authenticated case of death due directly to the use of electricity, hence the woman ought to have the benefit of the chance. If Dr. Janvrin was right, there ought to be a hæmatocele after the rupture of the vessels, but there was none. Cases of death had been reported where the sac was punctured.

AFTERNOON SESSION.

DR. FRANK P. FOSTER, of New York, read a paper on

VAGINAL INJECTIONS IN SIMS'S POSITION.

He referred to the general extent to which hot-water injections were now employed in the treatment of pelvic affections, although the essential features of the treatment—the recumbent posture, and the amount and high temperature of the water used—were often omitted. Dr. Chadwick had called attention to the value of the hot rectal douche as a means of applying heat to the deeper parts of the pelvis, but the plan was defective in that the heat was only applied to the left side of the pelvis, and the water was used in the form of a large enema, the

initial temperature of which was soon lowered; moreover there was doubt if the water retained its situation after being injected. In order to fulfil the indications—*i. e.*, to apply the water as closely as possible to the seat of disease, and to employ a sufficient quantity to secure the greatest effect of the heat, the reader had been using vaginal injections with the patient in Sims's position, since in this way the vagina would retain more water, while from the gravitation of the abdominal and pelvic viscera toward the diaphragm, the water in the vaginal vault comes into closer relation to the affected parts than when the patient is placed upon the back. By means of the injection apparatus devised by the reader several years before, it was possible to give the injection without annoyance to the patient from the overflow of water.

Dr. Barker said that he had been accustomed to use Cleveland's bed-pan in giving vaginal injections. He thought that in private practice Dr. Foster's method would be objectionable to most patients in the higher walks of life, because of the extra trouble entailed, the wetting of the bed, etc.

Dr. Charles Jewett, of Brooklyn, read a paper on

THE TREATMENT OF PUERPERAL ECLAMPSIA.

He desired to call attention to the value of veratrum viride. The drug had been unpopular because of its poisonous qualities. But when a pure preparation was given hypodermatically, it was of great value. It acted by depressing the heart's action and relieving arterial tension. In eclampsia it acted on the vasomotors, paralyzing them. It was also a motor-spinal depressant. Alarming results might follow excessive doses; still there were no fatal cases on record in which it was used in convulsions. It was important for the patient to be recumbent during the course of the treatment. The fluid extract, made from the rhizome of the plant, was recommended by Dr. Squibb. It should be given hypodermatically, in doses of from ten to twenty minims. The guide was furnished by the frequency of the pulse. If the latter was reduced to sixty, no convulsions would occur. If no result was obtained in half an hour, the dose should be repeated. The reader had used the drug in twenty-three cases, sixteen patients being primiparæ, there being only three deaths (13.6 per cent.) due directly to the convulsions; three other deaths occurred from other complications. Other measures were employed at the same time, as chloroform and hydragogues. Veratrum never failed to arrest the convulsions when given early. The pulse fell in from forty-five to sixty minutes after the drug had been given. As regarded its safety, in no instance was any dangerous symptom observed. In one case the patient took six drops three times daily for three weeks. To recapitulate, the advantages of the drug were these: it was harmless and manageable, easily administered, and rapid in its action. Chloroform should be given until the effect of the veratrum was manifest. The labor should be induced as rapidly as possible, if it was not proceeding satisfactorily.

Dr. King, of Washington, approved of the remedy, which he had suggested twenty years before, in a paper in which he sought to explain eclampsia as due to arterial hyperæmia of the brain. In a recent paper the reader had stated that during pregnancy the normal position of the child was transverse. In primiparæ it was usual for the head to descend below the brim during the later months of pregnancy. This premature descent caused pressure on the vessels, and produced hyperæmia of the brain. In three or four hundred thousand cases of pregnancy in primiparæ which he collected, in only a small number was the presentation transverse. Transverse presentations did not lead to eclampsia.

Veratrum certainly lessened the tension in the arteries. By feeling the arteries *above* the uterus in cases of eclampsia this increased tension would be noted.

In a discussion on this subject before the Obstetrical Section of the recent International Congress, one gentleman said that he gave only eight drops at a dose. He believed that a thin, undilatable os uteri in primiparæ was itself due to the premature descent of the head. Why did it occur? From the wearing of corsets, the weight of skirts, and from frequent coition during pregnancy. If these patients were placed in the knee-elbow position, the pressure would be relieved.

Dr. Barker called attention to the fact that he was the first one to use veratrum in this city forty years before, and that he published his results thirty years ago. He was rather disappointed to find that his words had apparently been forgotten. Veratrum was superior to all other arterial sedatives. He first used the drug prepared from the plant as it grew in Connecticut. He early tried Norwood's tincture, but found that it was twice as strong as the preparation which he had been accustomed to use. He had used veratrum for forty years without an accident.

Dr. Jewett closed the discussion with the remark that his original paper contained ample references to Dr. Barker's work. With regard to Dr. King's theory, it had occurred to him that, by external manipulation, the presentation could be changed to a transverse. He thought that convulsions were due to acute anæmia from arterial spasm of the cerebral vessels, and that veratrum relieved this spasm, by paralyzing the vasomotors.

The discussion of Dr. Chadwick's paper on the operation for

VENTRAL HERNIA AFTER LAPAROTOMY

was next in order.

Dr. Lloyd Roberts thought that prevention is the most important matter. Hernia has much increased in frequency of late, since drainage tubes have been so extensively used. He had seen hernia result from the use of catgut sutures, which dissolved before firm union of the wound had occurred. He invariably uses silk sutures, which are not removed until the eighth day; the longer they are left *in situ*, the firmer is the union. He removes the drainage-tube as soon as possible.

Dr. Johnstone said that Tait operates on umbilical hernia by splitting the tissues, turning one flap into the abdominal cavity and the other outside, uniting the denuded edges of the conjoined tendon between these two layers.

The scientific business having been completed, on motion of Dr. Reynolds,

THE THANKS

of the Society were unanimously given to the President for the masterly way in which he had presided over the most successful meeting which the Society has ever held.

DR. GRAILY HEWITT, in reply to Dr. Reynolds's

FAREWELL REMARKS

to the foreign guests, said that in the name of the foreign guests he offered an expression of their cordial appreciation of the courtesy which they have met with. It is a great privilege to meet the Fellows, and they will carry away the most flattering views of the work of the Society.

PROF. SIMPSON seconded Dr. Hewitt's remarks, and said that it has been a great gratification to him to recognize in the President a fellow-countryman. He would carry home useful hints.

DR. LLOYD ROBERTS reëchoed the remarks of the two speakers, and only regretted that he must part so soon from his new friends. He only hoped that he would be invited to the next meeting.

DR. LAWRENCE, of Bristol, said that if he got an easy passage back he would come again.

DR. BALLS-HEADLEY, of Melbourne, thanked the Society for the kind welcome which had been extended to him, and for learned papers which he had heard. He had passed one of the most agreeable weeks of his life at this meeting.

DR. CORDES, of Geneva, offered his thanks for the great kindness which he had received. He had enjoyed the hospitality of other nations, but none is equal to the American.

THE PRESIDENT said that he had been passing as an American citizen, but Prof. Simpson had "given him away." It takes a Scotchman to catch a Scotchman. He extended a cordial invitation to the foreign friends to attend their annual meeting another year.

Adjourned.

NEWS ITEMS.

THE PENNSYLVANIA HOSPITAL has recently purchased about 520 acres about twelve miles from Philadelphia upon which it is proposed to place the Insane department of the institution. The report presented to the contributors at their annual meeting held last week, foreshadows the character of structure intended to be erected. It says:

"For the accommodation of those of the private class who are able and willing to pay for liberal accommodations, to apply in the best manner the results of medical administration for the advantages of all classes, the hospital of the future presents an interesting problem. Some of its features may be expected to differ from structures now in existence. A hospital edifice will still be required, but limited, perhaps, in extent to the probable demands for care of acute cases and those requiring, for any cause, special observation. The plans will probably provide for the close surveillance of suicidal cases at night and for the complete separation and isolation of noisy and turbulent cases from quiet patients. There should be large, well-lighted day rooms for disturbed and untidy persons, apart from their dormitories, so that the latter may be vacated during the day, and that the day rooms may be ventilated when unoccupied. Greater concessions will be made to patients of refined sensibilities, that in the early or in the convalescent stages they may be properly shielded from some scenes and associations that might prove objectionable. Greater attention will be given to the needs and requirements of classes. Buildings with the attractive exterior of a country villa, free from some of the characteristics of a public institution or hospital, and an interior not unlike the arrangements of a private dwelling, will disarm the prejudices of friends, render the change from home less marked by contrasts of surroundings, and admit of an administration more nearly approaching that of a private family. While the degree of restriction may be greater in the hospital structure, in the detached villa it will be reduced to a minimum amount or entirely abolished. An intermediate class composed of harmless demients, paralytics, cases of mild forms of mental disorders, will remain to be provided for in wards that may be adapted to their requirements."

THE WASHINGTON CONGRESS.—*The British Medical Journal* of September 17th, devotes its leading editorial to the Congress and concludes as follows:

The President (Dr. Davis), we think, took a narrow standpoint in claiming for the Congress two principal uses—those of collective investigation, and of enlargement of views and increase of knowledge by mutual comparison and communication. Such means could almost be attained in these days of cheap and universal information and travel without any such machinery. Unless there be added to its undoubtedly excellent but limited programme an attempt at least to direct and draw together the profession throughout the world into one harmonious and comprehensive whole, the danger will arise that the more practical and farseeing of the supporters of the Congress will begin to say "*cui bono?*" and that it may follow an unfortunate younger sister, the Social Science Congress of England, into an unmerited obscurity. We trust that there is no foreshadowing of any such undesirable event in the absence from Washington not only of several of the leaders of medical thought in Europe, but of some of those men who have made the American School of Medicine what it is.

A new departure to greater power and influence would have fitly marked the meeting in the titular capital of the United States. If Washington is a city of fine distances, it is one of few memories. No traditional policy need mar advance in a country whose independent history is barely one hundred years old, and whose School of Medicine has barely had an appreciable existence of two-thirds of that period. But the opportunity has been missed, and though many of the discussions and papers will no doubt be remembered and valued, we fear that the abiding impression with regard to the meeting at Washington will be one of disappointment.

A FRENCH VIEW OF BERLIN AS THE MEETING PLACE FOR THE CONGRESS OF 1890.—A writer in *L'Union Médicale* of September 17, 1887, thus expresses his feelings in regard to visiting Berlin in 1890: "Before adjournment the International Congress decided to hold its next meeting in Berlin. Although possibly the German delegates to the Congress did not outnumber the French, yet they found in America a number of partisans in their favor in Americans of German origin. At Copenhagen the protestations of French delegates, especially of MM. Trélat and Verneuil, were opposed to

Berlin as the place for the next meeting; this obstacle did not exist this year; as but a small number of Frenchmen were at Washington the capital of Germany was chosen by necessity. Will we go to Berlin in three years? I admit that I should prefer to go there in such a peaceful manner rather than be obliged to traverse a route strewn with the bodies of German and French soldiers. But do not ask me my real desire."

A Medical Congress at the International Exposition of 1889.—The Minister of Commerce proposes a series of Congresses of scientific men during the Paris Exposition of 1889. Among these will be a Medical Congress, and also a Congress of Hygiene and Public Assistance.

The Third Congress of Russian Physicians will meet in St. Petersburg in April, 1888.

Professor Billroth.—This distinguished surgeon has steadily regained health and strength during the summer, and, it is believed, will resume his lectures in the autumn.

Professor Virchow's Rejection.—Professor Virchow, as a candidate for Rector of the Berlin University, was recently rejected because, it is stated, of his liberal political opinions.

A Prize Bequest to the Academy of Sciences of France.—The French Academy of Sciences has recently been given a legacy of 40,000 francs ($8000), the income of which will be given as a prize for the best essay on any subject proposed by the Academy relating to the healing art.

Von Nussbaum, of Munich.—This well-known surgeon has recently performed his five hundredth ovariotomy. The occasion was celebrated by a banquet, tendered him by the students of the university.

Over-pressure in Schools.—An earnest discussion is occupying French medical men over the question of over-pressure in schools. It is claimed that in nearly all schools by far too much is exacted of the pupils, and measures are under discussion for lengthening periods of exercise; preventing work at evening; and improving the sanitary condition of school-houses.

The Austrian Minister of Public Instruction has recently issued a report based upon the studies of medical men which advises a better division of school terms, increased holidays, and the lessening of memorizing home work, and severe examinations. The Minister was aided in his investigations by four physicians, and the welfare of the scholar is considered from every standpoint.

A Prize Essay on School Hygiene.—The Medical Society of the Canton Bern, in Switzerland, has offered a prize of 300 francs for the essay which replies best to the question, "How far can the physician remedy the over-pressure existing in Swiss schools, and what are the results of such over-pressure?"

A New Edition of Schroeder's Diseases of Women.—The eighth edition of this standard work has recently appeared, edited by Veit, and containing Schroeder's picture and a short account of his life by the editor.

Night Medical Service in Vienna and Paris.—In imitation of the Paris system of medical night service the Superintendent of Police has decided to establish stations for such service in Vienna, where a physician shall be constantly in attendance, and to which messages for attendance at night may be sent.

The report of the Prefect of Police for the three months ending June 30, 1887, shows in the night medical service of Paris a total of 1712 visits, an increase of 112 over the same period of the last year.

Pasteur's Treatment in Turkey.—No better field for the study of disease in dogs could be found than the Orient, where they are abundant in towns and cities. There will be no lack of canine material for a new institute of bacteriology to be established in Constantinople, to which all persons bitten by rabid animals are to be sent for preventive inoculation.

Poisonous Coloring Materials in Toys.—The Minister of Commerce of France has recently forbidden the employment in the manufacture of toys of the colored salts of arsenic, copper, and lead which are soluble in water. White lead may be used in making India-rubber balloons and stamped tin toys if it be combined with an oil varnish. The reds and yellows produced by the chromates and other salts of lead, may be used if applied with either oil or alcohol varnish. Prosecution for neglect of these laws will be against the manufacturer and not against the retailer, who will be guaranteed by the former that the goods are properly manufactured.

Profitable Practice in Russia.—Dr. Potain, of Paris, was recently summoned to attend an eminent Russian journalist with whom he remained two days. He received 20,000 francs (4000 dollars) for his services.

Pranzini's Brain.—The brain of Pranzini, a murderer recently guillotined in Paris, weighed 1280 grammes (between three and four pounds). An interesting phenomenon was the presence of air bubbles in the arachnoidean spaces, and between the convolutions, which is seen in the bodies of those guillotined. It is caused by the vacuum produced by the sudden withdrawal of a large quantity of blood from the vessels.

Ambulances for the Transportation of Infectious Cases.—A force of ten ambulances is to be stationed in Paris, each of which will have its separate staff, whose lodging will be at the ambulance station. They will be fully equipped to act with the police and hospitals in transferring cases of infectious diseases without risk to the public.

Proprietary Medicines in Russia.—The Russian government has just passed some stringent laws against proprietary medicines. The customs officers have been instructed that the entry and sale of medicines are only permitted under the closest conditions. The articles must not contain any ingredient injurious to health, and

the preparation must be one requiring for its manufacture expensive and complicated machinery, as well as long experience. It must not be liable to deterioration from age or transportation. The price at which the preparation may be sold in Russia is subject to the judgment of the Russian authorities, and its formula can only be kept secret for three years. All other preparations are to be excluded, nor can they be advertised in Russia.—*American Analyst*, September 15, 1887.

LIGHT AND DARK CLOTHING.—The *Epoch* of August 5th contains three papers on "How to Keep Cool and Well in Summer," by Drs. Cyrus Edson and Willard Parker, and Mr. David Jardine, which are in the main full of sensible advice. But Dr. Edson says it is best to wear dark clothing in summer, because black radiates heat more freely than white, and says that animals living in the Arctic regions are white, because that color holds the bodily heat. Dr. Parker, on the other hand, gives the usual opinion that light-colored clothing is best in hot weather. Dr. Parker is right and Dr. Edson is wrong.

The experiments of Coulier ("Expériences sur les étoffes qui servent à confectionner les vêtements Militaires, *Journ. de la Physiologie*, 1858,") show that the difference of absorption and radiation between different colors of the same stuff are not perceptible in the shade at temperatures between 70° and 100° F., while the white is much less absorbent than the black when exposed to the rays of the sun.

Dr. Edson's theory of the cause of the white color of animals in the Arctic regions, which we suppose he would extend to explain why the black races are found in the tropics, is one that is not in the least tenable.

The great point to be kept in view in selecting clothing for the hot weather is, not so much to provide for the hottest part of the day as for the evening when the temperature falls, and when cotton gauze underclothing is likely to lead to chilling the surface and to lay the foundation for rheumatic neuralgias of various kinds.

Thin woollen underclothing and light colored cotton stuffs for outer wear during the middle of the day are the best. The cloth ng should be loose to allow free circulation of air and evaporation from the skin. Tights are hot, though they may look cool on the stage. —*Sanitary Engineer*, August 20, 1887.

PERMANENT BATHS.—In the course of a paper (*Berl. klin. Woch.*, 1887, No. 20) upon the use of permanent baths (at a temperature of about 95° F.), L. RIESS, after giving instances of their value in cases of spinal disease and injury, adduces some rather remarkable facts of their efficacy in the treatment of dropsy, whether cardiac or renal. These cases are often complicated with bedsores, erysipelas, and gangrene, for which such treatment would be suitable, but he says that he long withheld it because of the idea that cardiac or pulmonary disease would be a contraindication to its employment. However, in 1879, in a case of extreme cardiac dropsy (mitral and aortic disease) with considerable erysipelas and cutaneous grangrene of the legs, he determined to try the effect of the permanent bath as a last resort, not without some misgiving lest the immersion should increase the dyspnœa and dropsy. The result proved quite the reverse, for a rapid improvement took place, and when, after having been in the bath for a fortnight, the patient returned to bed, the dropsy and other severe symptoms had disappeared. Since then Riess has adopted the procedure in a large number of dropsical cases, and invariably with benefit, the dropsy in most cases (whether renal or cardiac) diminishing within the first forty-eight hours in a striking degree. The quantity of urine is not increased *pari passu*, so that it is suggested that the effect of the permanent bath is to increase the functional activity of the skin, which is contrary to the prevalent notion. The good results obtained in cases of chronic rheumatism so treated are also mentioned, and it is held that the application of the method is practically very simple, it being necessary, of course, to allow the patient to lie comfortably suspended in a hammock, and to place a thick woollen covering over the bath to retain heat as much as possible. At first it is well to allow the patient to leave the bath at night, but as he gets more used to it he may spend days and nights in it with much comfort to both himself and his attendants.

NOTES AND QUERIES.

CORRIGENDUM.

Page 370, 2d column, 22d line, *for* "R. P. Kinloch" *read* "Cornelius Kollock, of Cheraw."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM SEPTEMBER 20 TO SEPTEMBER 26, 1887.

JOHNSON, R. W., *Captain and Assistant Surgeon*.—Granted leave of absence for twenty one days, to be taken advantage of so that he will return to his station at the latest by the middle of October, 1887.—S. O. 203, *Division of the Atlantic*, September 23, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 24, 1887.

HARVEY, H. P. *Surgeon*.—Ordered to the U. S. S. "Mohican."

COOKE, G. A., *Surgeon*.—Detached from the "Mohican," and ordered home.

CLEBORNE, C. J., *Medical Inspector*. Promoted to Medical Director, September 18, 1887.

WALTON, T. C., *Surgeon*.—Promoted to Medical Inspector, September 18, 1887.

BOYD, J. C., *Passed Assistant Surgeon*.—Promoted to Surgeon, September 18, 1887.

BRYON, J. R., *Surgeon*.—Ordered to Marine Rendezvous, New York, October 1, 1887

FIELD, J. G., *Assistant Surgeon*.—Detached from Marine Rendezvous, New York, and ordered to the "Vermont."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING SEPTEMBER 24, 1887.

WHITE, J. H., *Passed Assistant Surgeon*.—Promoted and appointed Passed Assistant Surgeon from October 1, 1887. September 13, 1887.

PETTUS, W. J., *Assistant Surgeon*.—To proceed to Savannah, Georgia, for temporary duty, September 20, 1887.

GOODWIN, H. T., *Assistant Surgeon*.—Appointed an Assistant Surgeon, September 22, 1887. Assigned to temporary duty, at Norfolk, Virginia, September 23, 1887.

THE MEDICAL NEWS.

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ORIGINAL LECTURES.

THE METHODS IN MEDICINE IN THE NEAR PRESENT.

Extracts from an Introductory Lecture to the 63d course at the Jefferson Medical College—Session of 1887.

BY J. M. DACOSTA, M.D., LL.D.

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE.

IN selecting a subject to lay before you to-night, I thought it might not be without advantage to bring together a few observations such as any one who watches the times can make and accept, on the methods in medicine likely to be the prevalent and fruitful ones in the near present. We live in a period of alertness and upheaval. Powerful forces are at work clearing new pathways, crushing obstacles, hewing in to rock here, building galleries there. Restless activity is undermining much of what is old, and asking if it be not better to sweep it all away, and to construct everything anew on different lines. Amidst all this bustle and din, it is well to stand for a moment aside to examine whither we are tending, and in how far the new results can be shaped into means of permanent use. If, in trying to group together some thoughts on the methods in medicine likely to prevail, I appear too sanguine of immediate effect from present work and thought, I beg you to reflect on the gigantic strides medicine has made since the beginning of this century, and how fair it is to presume that, with more workers and improving ways, we shall soon get even quicker and more decided results. Medicine, as we now see it, is almost a new science; scientific medicine, indeed, had scarcely an existence a hundred years ago. It was born with Harvey; but it slumbered until it awoke with Morgagni, with Auenbrugger, with Jenner, with Laennec, with Bichat, with Bright, with Charles Bell, cradling it and guiding its childhood.

The methods in medicine in the near present are certain to be based on the growth of knowledge in the fundamental branches, in anatomy, in physiology, in chemistry, in hygiene, in general pathology and morbid anatomy, as well as on its self-development by improved means of observation and by experiment.

Let us first take anatomy. Is it progressing, and what may scientific medicine further expect from it? The limitation of gross anatomy was, with few exceptions, reached long ago, and this has been fully recognized by anatomical teachers.

Yet, though it be true that gross anatomy is complete, we must ask for further service from the anatomist. We want him to teach with more precision and with a full recognition of its importante, regional medical anatomy, the anatomy of internal organs in their relation to parts around them likely to become implicated in disease and to the external coverings of the body. We also need accurate information as to nerve terminations and anastomoses, both in viscera and on the skin, and as to the courses of nerve fibres in parts of brain and of spinal cord. The great attention now given to nervous pathology and to the application of electricity calls for this; and while much of the anatomical work is done, it still requires definiteness and clearness to serve the purposes of the clinician.

The great advance in anatomy in this century has come through Bichat's work in general anatomy, and the study of microscopical anatomy which it ushered in. An insight has thus been gained not only into the character of tissues and their association, but a philosopical anatomy has been created, which, elaborated by great naturalists, by Agassiz, by Owen, by Leidy, has taught us to study the entire animal kingdom as a whole; to appreciate the relations of the same textures in the highest as well as in the lowest forms; and to view with ever-increasing wonder the admirable adaptation and design in Nature. It has done more. It invites us to extend our studies into one form, in the certainty that, the fuller we do so, the better we shall understand all. It has done yet more. It has aided us physicians greatly by letting us appreciate the kindred diseases of identical textures, no matter in what part of the body situated; and by explaining to us the similarity with which remedies affect these textures, whether they be in one or another organ. General with minute anatomy is thus acting on medicine by making it broader, more scientific.

How is physiology influencing medicine? (It is not for me to review here its general advances.) The study of functions is doing something to tell us how secretion, nutrition, and growth are brought about. But not enough of this knowledge has been gained to become a basis of scientific therapeutics. It may be ours some day; and with it may dawn an era in which disease will be modified or strangled at its birth. What physiology is now working out efficiently for us is the elucidation of the nervous system. The great problem of the functions of special centres in brain and spinal cord is being settled; and with this advance we have gained not only in disease recognition, but in disease cure. It seems marvellous to read in journal after journal of the day of more and more instances in which deft hands, acting in the light of correct appreciation of symptoms, made only possible by the physiological labors of Broca, of Ferrier and their followers, have removed tumors of the brain successfully, and saved lives. The knowledge which influences these actions will grow, and in the near present lead to the most brilliant results.

Chemistry is doing much for medicine. She is constantly adding valuable compounds; such as the bromides, the ethers, chloral, nitroglycerine have been found to be. She is extracting from well tried agents the active principles; such as atropine, hyoscine, aconitine. She is busying herself, as new plants are proved to possess healing properties, with isolating the valuable

and most available parts. She has already taught us so much of the character of the secretions, that we condemn one who does not avail himself of his testimony as criminally ignorant or neglectful. But we still want from her simpler means for the ascertaining of the quantities of the ingredients in the secretions. We want ready methods for the sake of practical utility. And we ask that her work be brought into closer connection with bedside work; that we may understand not only the character of the secretions in a given disease, but the variations in them in the different phases of the same disease—knowledge which would be very valuable in foretelling issues.

Chemistry has entered upon a most hopeful search in the study of the poisons developed by decomposition. It is not only that these "ptomaines," which have been found in diseased or putrid meat and fish as well as in stale eggs and in cheese, explain the poisonous symptoms which we know these articles to occasion; but the alkaloids of decomposition occur also in the human body, there due to cadaveric change, or formed prior to death. The system through their presence may poison itself; and it is likely that by their study we shall get a solution more certain than we now have of the features of uræmia, of the brain disturbances of bad forms of jaundice, of venom poisoning, of the disorder in low and putrid fevers, and in many a state which we vaguely call blood poisoning. Who knows, too, but what we shall understand—what now we appreciate, but do not understand—how strong emotions, how love, fright, anger, or how excessive fatigue produce illness, doing so, perhaps, by developing in the altered secretions a poison disturbing the nervous system or corrupting the blood.

The physician in the times near at hand will be a very decided sanitarian. As it is, we are all sensible of the growing importance of hygiene. We know the value of sunshine, of fresh air, of open spaces, of pure water, of wholesome food, of appropriate dress, of cleanliness, of effective drainage, of thorough disinfection. We appreciate the use of innocent recreation. We feel the necessity of saving young lives from premature exhaustion by the drain on their unformed powers from overwork, especially from the senseless cramming into jaded brains of useless knowledge. We take heed of the exercise that soothes and refreshes, that fits mind as well as body for better purpose, and of the excessive devotion to it which injures both.

But we have still the task before us of making people generally understand all this; and at the task we must go with the aggressiveness of decided conviction. No faint words; no half-measures. Ignorance, cupidity, the obstructive, terrible force of inertia, must be made to feel that they have a deadly enemy at work in every member of our profession. Do you think it unnecessary to be so active? Listen to the report of a Committee to the American Public Health Association a few years since.[1] Of the whole number of deaths in the United States as ascertained by the census of 1880, not less than 200,000, or considerably more than one-fourth of them, were due to epidemic diseases. Measured by the known results in places exempted, by energetic means for their prevention, from the prevalence of epidemic diseases, if these means had been made general throughout the United States, 100,000 of the sacrificed host would probably have been saved. Listen also to these ghastly statistics taken from the recent writings of an eminent sanitarian.[1] They are more particularly concerned with childhood. "Children under five years of age," we are told, "are expected to die in what may almost be a definite proportion." Examining different countries, we find that of ten children born in Norway, only a little over seven attain their twentieth year; in England and in the United States of America somewhat less than seven; in France, only five reach it; and in Ireland, less than five. What a record when we take into account that most of the diseases of childhood are preventable diseases, and that with a just hygiene they would be reduced to insignificant proportions.

But we need not despair of effecting much by sanitary means properly used. Let us look at results already accomplished by means as yet far from perfect. I will quote, as concerning us all most closely, some of the results obtained in our own country. In Michigan the saving of life from scarlet fever alone has amounted in the last eleven years to 3718. In Memphis, the drainage of which was some years ago in the worst possible condition, the death-rate has been reduced in six years from 35 in a thousand to 23.80 in a thousand; in Chicago, in the last five years, from 25 69 in a thousand to 19.46, a saving of 17,214 lives in that city during this period.[2] If then already something is done, how much more can be done by persistent and united effort. The medicine in the near present will be as largely a medicine of prevention as a medicine of cure. Let us trust that it will be even more so. Let us go on in our noble endeavors to be efficient preventers as well as efficient curers of disease. Let us go on with courage and devotion in the self-imposed task of teaching how to lengthen life and to add blessings to it. Let us go on with increased power presenting the splendid spectacle of a profession, earnestly and in its loftiness, striking at its own existence, and, for the common good, endeavoring with all its might to immolate itself.

Much of the advance in medicine of late years has been brought about by the study of general pathology and pathological anatomy. Neither receives in this country the attention it deserves. Yet it is the pathologist who develops into the best clinician. Morbid anatomy is certainly the very foundation of the recognition of disease; it is to the physician what anatomy is to the surgeon. But it is invaluable, too, to the surgeon. A great teacher recently gone from us, one whose sagacious words were so often almost reverently listened to in this very hall, the late Professor Gross, records, in his autobiography, the immense benefit morbid anatomy was to him as teacher, writer, practitioner, and bewails as one of the crying sins of the day its being taught in so few of our schools. But pathological science is cultivated with assiduity by some here and by many in Europe; in the medicine of the near present its full appreciation is certain, and its methods will be the approved methods of great progress.

[1] A. N. Bell: Public Health Papers and Reports, vol. x. 1885.

[1] B. W. Richardson: The Commonhealth, 1887. Essay on the Seed Time of Health.

[2] Rohé: Address in State Medicine before the American Medical Association, Chicago, 1887.

In general pathology there is just now the greatest activity, due to the discovery of minute living organisms in the body; many, indeed, are the speculations as to what these germs, these infinitely small bodies discernible only by the microscope, have to do with the production of disease. The speculations are not new; and standing in this place it is a pleasure to point to it, that one of my predecessors in the Chair of Medicine, Prof. John K. Mitchell, with rare sagacity and keen analysis, was among the very first to lead the way on this fruitful path of research. In relapsing fever, in tuberculosis, the influence of bacteria has been established; in many other, especially infectious maladies, we may fairly infer microbes to be the cause, or to play at least an important part. The whole medical world, dissatisfied with its knowledge of the causes of disease, particularly of communicable disease, is restlessly seeking out these little bodies of specific power. It feels that if it can be made a demonstrated truth that they are causative agents, not only will the mist of conjecture vanish and science henceforth walk in broad daylight, but that there will be hope of overthrowing disease at its very beginning, through means which vanquish its parasitic source. Indeed, already now "Death to Bacteria" is the rallying cry of many of the eager workers in curative as well as in preventive medicine.

Thus far, it must be confessed we have had, as regards internal medicine, no success in the search after agents which destroy the germs. The articles proposed are as apt to poison the patient as the microbe; some would be even more destructive; and none can be as directly and as completely brought into contact with parasitic life in the organs or in the blood, as surgeons bring them in contact in their antiseptic treatment of wounds and injuries. But must we despair of conquering these germs? It is not too sanguine to anticipate that if their paramount importance be fully established, the means for their destruction will be found. When has any discovery stood still? Look at the wonderful uses of steam, and remember what it was in the time of Watt. Recall the simple experiments of Volta, of Galvani, and of Franklin, and think what the great agency they found has become in these days of electric telegraphs, and electric lights, and electric railways, and of applications more dazzling than the imaginative creations of all the Eastern fairy tales. Reflect that life means progressive development, means the present and the future, not the past; and then venture to say that progress stops, and that it will be impossible to bring under control or to stamp out hosts of diseases by crushing their ascertained minute cause.

The whole science of bacteriology is still very young. The greatest practical gain has been to the surgeon, and in the better knowledge of disinfectants for the destruction of the noxious organisms outside of the body. In medicine we are still for the most part groping after the truth, hoping with it to find new lights, new means. And it is not certain that, in the glimpse we have caught of this bewildering microscopic world, we have reasoned clearly about its members. Are the particular microörganisms seen in special diseases necessarily the specific source? May they not be in some instances causative; in others simply the recipients and carriers of disease; in others again merely the followers or attendants on the unknown something that eludes our search? Further, is not their number as well as their presence important in producing morbid action? What we already feel the need of is not the mere accumulation of observations, but better appreciation of the relative value of the facts. We greatly want here what I may venture to call "scientific prospective;" and scientific prospective must be a method in bacteriology, if this promising science is to become the help we all hope it will be.

Thus far we have been regarding the tendencies in medicine, and the ways that will develop out of them in the near present, in connection with the general foundations of the science. But after all everything comes at last to the bedside for judgment on its worth; and the methods of observation by which clinical medicine has grown in the past will continue to be its chief sources of growth. The keen eye, the trained ear, the cultured touch, the collation of symptoms, the correct reasoning, the skilful adaptation of means of cure, will be the same in method; though new ways of obtaining more complete knowledge by the so-called instruments of precision, by the thermometer, by the sphygmograph, by the spectroscope, and, perhaps, by other instruments embodying physical discoveries of the day which have not been as yet adequately used in medicine, such as the telephone, the microphone, and the phonograph, will be more and more fully tested.

The great advance of our times is in therapeutics, partly through the results of suggestive experiment, partly by the more accurate appreciation of the action of drugs on the economy. Still, as in the past, clinical experience must be the final test of the value of remedies. Yet it is certain that the scientific methods now employed, will result in therapeutics simpler, and more effective in their simplicity. In the near present treatment will discard hap-hazard combinations, and aim at producing results with single remedies, or with remedies so adjusted that their combination brings out the full strength of the one most depended on, and reduces power in directions we do not wish it exerted, as witnessed, for instance, in combining belladonna or the bromides with opium. Again, local treatment is likely to be more and more resorted to. Will this make of medicine a mathematical science? Will it make the successful physician simply an accomplished physicist? Vain thought. Indeed, the methods, even those the outcome of the most conclusive experimental science and of the most perfect mechanical treatment, must ever take cognizance that in treating the sick we are dealing with the man in disease, quite as much as with the disease in the man. However more exact our means, however larger our resources, the personal something in the sick, the personal something in the physician will never cease to have their power. And the greatest success will always be with the greatest measure of tact, with the quickest appreciation of vital strength, with the magnetic influence which instills confidence and trust, with the fullest inspiration of hope, as well as with the courage that knows when to take risks and with the wisdom that knows when to rest.

A great deal of the improvement in Medicine, especially in therapeutics, is due to the knowledge that many diseases are self-limited, and to the appreciation of the course they run uninfluenced by medical means. This study of the natural history of disease is invaluable; and

giving us, as it does, a standard, it enables us to correct the claimed importance of special agencies, and to estimate at their true worth the vaunted cures of exclusive systems. It was through it that the protest of Young Physic against excessive and violent medication became effective. It was through it we began to comprehend the power of Nature. But it has done its work largely; and we must not stand still in that work. Young Physic has become middle-aged, and with its years has thrown off some of its youthful eccentricities. To go on now insisting on the supreme powers of unaided Nature, is to be as much behind the times as to continue in the constant use of disturbing, potential remedies, which the phase of medical inquiry alluded to did so much to discredit. Medicine has advanced, and has given us proved agents, alike for cure and for relief. In the near present the pandering to the belief many of the public still hold so dear, that Nature is all-powerful, that Nature must not be interfered with, will be looked upon as a sign of a weak, not of a sagacious mind. Those who seek counsel will rightly turn to him who knows the limits, while he believes in the resources of his art, and uses that art boldly; and not to him who sits down simply to see what Nature will do, and tries to throw the cloak of a philosopher over the shortcomings of a sluggard. New medicine condemns these posers as much as the old medicine they condemn.

We hear much of what Nature will do without assistance. Will she enable a man to walk with a broken leg? How often does she remove pus from the cavity of the chest? Will she arrest a peritonitis, or keep a perforated intestine quiet as efficiently as opium? Will she check the fierce onset of malaria like quinine; rally a faint heart like digitalis; or quiet the sleeplessness about to end in fatal exhaustion like chloral? Let us stop the prating about the unlimited power of Nature, and of not interfering with her processes. The same Providence that gave the power is daily letting us find more and more means to help it, when weakened; to repair it, when stricken. It may be in individual maladies still the best course not to attempt radical interference, since the measures to overcome them have not been as yet discovered. It is often impossible with our present knowledge to do otherwise than to husband strength and to allay disturbing symptoms. Each generation will re-examine and determine for itself, in the light of new helps, its influence over particular affections. A generation that has witnessed the introduction of the hypodermatic syringe, of the bromides, of chloral, of nitroglycerine, of cocaine, of antiseptics, need not despair of gaining more agents potent for control.

We are in an era in which Surgery is becoming the adjunct of medical therapeutics, or acting where Medicine cannot act. How far this is to go, time alone can determine. Before many years what can be safely attempted, and what cannot, will be fully known. But from the mode of procedure good has come. The history of intestinal obstructions and of peritoneal abscesses is the history of advancing success. Extirpation of brain tumors shows alike the increased skill in the recognition of disease and in its treatment. The indications for tapping the chest and the pericardium are becoming better and better defined. The removal of growths in the larynx cures cases beyond the reach of Medicine. The extirpation of enormous diseased spleens has been in some instances successful. There is, of course, risk that the daring efforts and glowing anticipations of surgeons may lead to attempts which cannot possibly succeed. But the method is a method of advance; a method to be used when medical art fails. As internal therapeutics grow in resources, let us hope that the instances of employing surgical means will become fewer. Yet in the near present they will be used, and, assisted by the new and growing surgery of antiseptics, with probably increased ease and surer results.

The practice of the times we are approaching will then be simple, accurate, decided. The leading men of the day show these traits strongly. It will still require on the part of all much labor to attain this simplicity, this accuracy, this decision. It will require continuous work to sustain it; and, with these methods predominant, many a type, many a familiar figure will be seen no more.

In justice, I cannot leave my subject without taking some notice of what the position of Medical Instruction is to be, to keep pace with the improved methods to which we are attaining. It would lead me far beyond my limits to examine this question in detail; but it is evident that Medical Teaching must conform to the spirit and aims of the developing science. It will lay more and more stress on laboratory work, on bedside instruction, on clinical exercises, on personal training. It will do more and more, what I believe this College was the first, certainly in this country, to do, aim at breaking up the class into small sections for special instruction, so that everyone may have the opportunity to learn for himself under skilled supervision. It will, as studies advance, encourage to thoughtful, independent work with scalpel and in the laboratory; that kind of work which caused Soemmering, while a medical student, to earn from famed anatomists like Camper and Monro enthusiastic praises for his researches on the nerves at the base of the brain; the kind of work which Black, at the age of twenty-four, announced in his graduation thesis, revolutionizing Chemistry and paving the way for the great contributions of Lavoisier; the kind of work which led Koller but a year or two years since to discover the properties of cocaine; the kind of work which—I say it with feelings of just pride—is about to bear fruit in the publication of a volume of original essays on remedies of indigenous growth, containing a number of the investigations of our students in the laboratory of the Professor of Therapeutics. Progress in Medical Instruction will lop off many unnecessary studies, followed more particularly in some of the schools of Continental Europe, and having only a remote connection with medicine. It will require of all who engage in professional study mental training; but it will not too narrowly specify the kind of training, allowing the broadest limits in proof of mental aptitude. It will aim quite as much at educating in the methods of work as at mere supply of knowledge. It will lead to freedom of study; stop the wearying system of constant, so-called progressive examinations, which are regarded as tests of fitness to pass from one branch to the other; and will make one examination—the final one—sufficient, no matter when or how the knowledge has been acquired.

Will advancing methods in teaching dispense with lectures? "Lectures, sir!" said Dr. Johnson, "what

man would go to hear that imperfectly at a lecture which he can read at leisure in a book?" Lectures of the kind referred to—mere recitals without demonstration—enlightened instruction will forego. It will insist upon lectures which are not simply what can be read, upon those which address the eye as well as the ear, upon teachers that are not mere talkers, and if one of this class be found in position, public opinion will call for his removal.

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ORIGINAL ARTICLES.

THE PROGNOSIS OF CÆSAREAN OPERATIONS.[1]

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If it were proposed to a physician to beat out the brains of a newborn living infant with the view to diminish the perils of the puerperal period, the proposition would certainly be rejected as too horrible for consideration, even though the physician was convinced that the theoretical grounds for the recommendation were correct. Yet there is a disposition to treat any hesitation to destroy the unborn child in the maternal interest as pure sentimentality.

I must confess that I have never felt satisfied with this bit of curiosity, and I am sure that for the bulk of the medical profession nothing can be more welcome than to learn that there is statistical evidence sufficient to warrant us in a very considerable proportion of cases to decline, equally in the interest of the mother and the child, to lend our aid or countenance to the sacrificial operations of midwifery. By statistical evidence I do not mean bare records of deaths and recoveries, but a careful study of recorded cases, deductions from which are rational, and furnish the safest guide to scientific practice. It has been objected to the old statistics that they contained an undue proportion of favorable cases, and it may be a fact that a large number which ended fatally were never recorded; but on the other hand, some years ago I took occasion to analyze the histories of cases upon the death list, contained in the collection published in 1832 by Michaelis. They all belonged to the nineteenth century, and have been included in all the statistical tables that have since been published. In thirty-four the histories given were tolerably explicit. In one of the instances the operation was performed upon a corpse, and in the others upon dying women, or under circumstances which reduced the chances of success to a slender possibility. No wonder, under such conditions, Mauriceau, speaking of the Cæsarean section, declared, "If it is true that any women have escaped, it was the work of a miracle, or the express wish of God, who, if he wills it, is able to raise the dead, as he did Lazarus."

But the operation is not of necessity a fatal one. As regards the Cæsarean section in this country, it is presumable that few, if any cases have escaped Harris's vigilant inquiries. In a personal communication from him, I learn that up to date there have been 153 cases with 56 recoveries. This is undoubtedly a most discouraging report, but the percentage of recoveries should certainly teach us that the operation is capable of betterment by human ingenuity. It was until lately too much the fashion to quote the statement of Baudon, made in 1873, that there had not been a successful case in Paris in eighty years, and to ignore the results of individual operators. Thus Winckel, Sr., practising in a poor community where osteomalacia prevailed, in 15 operations saved 7 mothers and 8 children; Hœbicke operated 16 times with 11 recoveries; Maslieurat Lagemard, operated six times, and all his patients recovered. Déconène, of Courtrae, operated six times, and saved five women and four children, and Harris has been able to report 19 cases in Louisiana with 14 recoveries. In all these instances the operations were performed not in infected hospitals, but in the pure air of the country. Again, Dufeilthay's statistics showed 81 per cent. of recoveries, where the operation was performed before the mother became exhausted, and Harris has shown that under similar conditions in America, 21 out of 28 patients recovered.

These facts have, indeed, become sufficiently familiar, but they have been so persistently ignored by the anti-Cæsarean school in its polemic, that it becomes necessary to reiterate them in the rebuttal evidence offered by Cæsarean defenders. They show that the old operation when performed under fitting conditions, in a healthy locality, and with sufficient skill, has had a fair measure of success. Barnes claims for the alternative operation of craniotomy in extreme degrees of pelvic deformity precisely the same pre-requisites. "Obviously," he says, "we cannot recognize fatal cases of craniotomy in extreme deformity, unless the operation was begun under selected circumstances—that is, before exhaustion had set in, and conducted with due skill and after approved methods."

But in spite of the testimony favorable to prompt action, Harris has recently reported that during the last seven years in this country, in 27 operations only 5 women and 10 children have been saved, and the enemies of the Cæsarean section have pointed to these results as showing that it alone of all the departments of abdominal surgery has profited nothing by modern science. Without question it is, however, the preaching of those, who go around crying woe, woe! that is responsible for this melancholy decline. The operation ought never to be regarded as one of last resort. If the patient is dying, it is the duty of the physician to secure euthanasia, and not to make the death-bed the field for surgical display.

In marked contrast with the poor success attained in late years by operators in this country, Harris[1] has recently reported with gentle irony the histories of nine women in advanced pregnancy, whose wombs were ripped by the horns of infuriated cattle, with the survival of five women and four children, and of six cases of self-inflicted Cæsarean section, in five of which the women recovered.

[1] Read in the Section of Obstetrics, International Medical Congress, September 6, 1887.

[1] Harris: Cattle Horn Lacerations of the Abdomen and Uterus in Pregnant Women. Am. Journ. Obst., July, 1887.

I have spoken so far of the old operation, meaning thereby cases in which nothing was done, or inadequate measures were employed to prevent the subsequent gaping of the uterine incision. Under such circumstances as favorable cases closure was effected usually by an adhesive inflammation, which united the uterine to the abdominal walls. To this were due the favorable results when the Cæsarean section was repeated upon the same subject (8 deaths in 119 operations, Lundgren), as the operation then became virtually an extraperitoneal one. According to Sänger, only one instance is known where complete union took place throughout the entire length and thickness of the wound. Sometimes the cicatricial tissue extended the entire length, but not through the thickness of the incision, and was of a callous consistency; in others, the line of union was at points of extreme tenuity, disposing to hernial protrusions, and in subsequent pregnancies to the production of rupture; while in others again, union took place at intervals only with the formation of fistulous openings, communicating either with the abdominal walls, or with circumscribed cavities within the abdominal enclosure.

Strangely enough, even after these facts had become familiar, it was not immediately obvious that better union could be secured, and the dangers of the operation lessened by the employment of a proper suture. The belief prevailed that sutures were a source of irritation, and that the alternating contractions and relaxations of the uterus during the early days of the puerperal period practically destroyed their utility. So strong, indeed, are old prejudices that Porro's proposition to avoid the risks arising from gaping of the uterine wound by the removal of the entire uterus has very recently been regarded not as a clumsy device, but as a surgical necessity. Indeed, it has been in this country chiefly, where tradition exerts a feeble influence, that, prior to the appearance of Sänger's exhaustive monograph, the suture has had anything like a fair trial; and Sänger strongly reinforced his argument in favor of its employment by the successes obtained through its agency by Pohn, Brickell, Jenks, and Lundgren. Of these Brickell is specially deserving of honor. For twenty years, in spite of sneers and ridicule, he insisted on the employment of the suture, and foresaw that the suture was destined to remove the Cæsarean section from the category of happy-go-lucky expedients to the level of a legitimate surgical procedure.

But, however others may have contributed to the foundations, it has been the glory of Sänger to crown the work by indicating with precision the manner in which the vast experience acquired of recent years in abdominal surgery could be made available for the rehabilitation of the Cæsarean section. Leopold, the first to test the improved method, has now operated 13 times with 12 recoveries, and in Crede's clinic there have been 7 operations (4 by Sänger) with no deaths. These figures represent the possibility of the operation. In Leopold's fatal case the cervical dilatation had been prevented by old cicatrices. Cæsarean section was performed after twenty-seven hours of hard labor. The lower uterine segment was bruised, inflamed, and œdematous from long-continued head pressure. Death was due to peritonitis. In similar cases Leopold now advocates the removal of the injured organ by the method of Porro.[1]

These results sustain the dictum of Sänger, that the Cæsarean section, supplemented by deep and symperitoneal sutures, is devoid of danger if performed before the exhaustion of the patient—before the occurrence of infection—and in consonance with the principles of antiseptic surgery.

In Crede's last report (Mittheilung aus der Geburtshülflichen klinik, in Leipzig, Arch. f. Gynäk., vol. xxx. p. 328), the number of patients operated upon by Sänger's method was increased to 50, with 36 recoveries, and 14 deaths. Since then there have been published 6 more cases, viz: those of Döderlein, Perret, P. Bar, Lusk, Parrish, and Ohage. Of these the first four ended in recovery, and the last two in death. The total mortality thus far is 28¾ per cent.; but America furnishes seven cases, with but one recovery. If we deduct these, the mortality falls to 20$\frac{29}{40}$ per cent. It is, therefore, particularly becoming in us, as chief contributors to the death-rate, to inquire into the causes and complications that have led to the fatal endings. The results of such an investigation are very interesting.

1. Garrigues. *Am. Journ. Obst. Case of lumbo-sacral kyphotic pelvis.* The patient had caries of the sacrum and lower vertebral, with synostosis of left iliac joint, contraction of left knee, and talipes equinus. She had had hæmoptysis, and was suffering from cystitis and vaginitis. For a month previous to operation the patient rarely left her bed, and suffered from nearly constant vomiting, and had to be nourished from time to time by enemata. Owing to ante-partum hemorrhage, she was, at the time of the Cæsarean section, weak and suffering, pulse 124, lips blue, and with cold hands and face. It was not thought by those in attendance that the patient could survive any operation. She lived 48 hours.

2. Beumer. *Arch. f. Gynäk.*, vol. xx. p. 409. *Cervical myoma.* Patient had cystitis and pyelonephritis. Both kidneys were nearly destroyed. Death occurred in 36 hours.

3. Krukenburg. *Arch. f. Gynäk*, vol. xxviii. p. 411. *Conjugata vera estimated at less than two and a half inches.* Patient a dwarf three and a half feet high, rachitic and scorbutic. She had been twenty-five and a half hours in labor, and was extremely feeble at the time of the operation. After the latter, hemorrhage due to complete atony of the uterus occurred. Death from collapse. Fasola, in a similar case of inertia, associated with grave internal hemorrhage following upon the performance of Sänger's operation, amputated the uterus. The mother recovered.[2]

In the following cases death resulted from exhaustion or septic infection due to extreme prolongation of labor. In all the indications for Cæsarean

[1] This plan he has since followed in a case where the uterus was infected at the time of the operation. The woman recovered. Leopold: Arch. f. Gynäk., vol. xxviii p. 120.

[2] Fasola: Gaz delle Cliniche, Nos. 24 and 25, 1886.

section were indisputable at the outset. They in no sense illustrate the dangers of the operation, but rather the folly of postponing action until the seeds of death have been sown.

4. Münster. *Centralblatt*, 1886, p. 82. *Pelvic tumor.* Patient, after four days of labor, was conveyed to Königsberg, a railway journey of seven hours. Obstruction due to large pelvic tumor. Operation performed after four days of labor, twelve hours after rupture of membranes. Escape of fetid gas. Endometritis septica before operation. Death in four days.

5. J. R. Weist. *Med. Rec.*, March 13, 1886, p. 301. *Retrocervical myoma.* Operation four weeks after rupture of membranes, and nine days after labor had begun. Death in twenty-four hours.

6. Drysdale, *vide* Harris. *Amer. Journ. Med. Sci.*, October, 1885. *Retrocervical myoma.* Labor lasted two weeks. Septic infection at time of operation. Child putrid. Death in twenty-six hours.

7. Breisky.

Finally there remain a limited number of cases in which death was due to some defect in the antiseptic precautions.

8. Ehrendorfer. *Arch. f. Gynäk.*, vol. xxv. p. 128. *Fibroma of fascia, invading pelvic cavity.* Patient had had three living children, membranes ruptured at 3 A. M., on September 28th. At 4 P. M., on the 29th inst., Cæsarean section; escape of meconium into abdominal cavity. Ligature around left tube to prevent hemorrhage. Death in five days, from peritonitis purulenta ichorosa. Uterine cavity contained strips of decidua infiltrated with pus, with necrosis of tissue between the sutures.

9. Jewett. *N. Y. Med. Journ.*, August 29, 1885. *Uterine Cancer.* Profuse hemorrhages in latter part of pregnancy, constant pain, no sleep. Death from septic peritonitis forty-four hours after operation, infection probably due to case of erysipelas at the time in the hospital.

10. Ohage. Report received from Dr. Harris. *Conjugata vera under two inches.* Rachitic dwarf, labor induced; operation twelve hours later, when os was the size of quarter of a dollar. Death on fifth day from diphtheritic endometritis.

In addition to the above, Credé reports three cases communicated to him by letter, one operated upon by Neugebauer-Bieganski, of Warsaw, one by Bieganski, of Warsaw, and one by Morisani, of Naples, where the operation, though performed under apparently favorable conditions, was followed by death due to infection.

The more these cases are studied the more evident it becomes that the deaths were the results of preventable causes, except in instances where the operation was fatally handicapped by antecedent disease; indeed, the prognosis of the modified Cæsarean section appears to be favorable whenever performed with due surgical skill, and under circumstances which admit of surgical success.

As regards the saving of infant life, the results have been hardly less gratifying. In times past the anti-Cæsarean school has furnished statistical record showing a heavy infantile mortality associated with the operation, but in the fifty-six cases in which the Sänger precautions were employed only six children were born dead, and of these four were putrid at the time the operation was performed.

In Germany proper there have been thirty-five operations with the recovery of thirty-one women, and the saving of thirty-three children. In this country, in seven operations, there have been saved one women and three children. In view of this unflattering discrepancy it seems well worth our while to inquire in what way we can so improve our methods that our results may no longer give to the modern Cæsarean section a sinister aspect not justly its due.

Now, in the first place progress is not to be expected on our part until our professional men as a body make themselves familiar with the import of the various forms of pelvic obstructions, and learn to discriminate, during pregnancy, the conditions which indicate, respectively, the induction of premature labor, the Cæsarean operation, craniotomy, or a Fabian policy. Of course, the discussion of these and similar questions is not germane to my subject, but it may not be out of the way to note that craniotomy is not available in cancerous degeneration of the lower uterine segment and vagina, in obstruction due to fibroids and other tumors occupying the pelvic cavity, and in cases where the conjugate diameter measures less than two and a half inches. I do not pretend to claim that craniotomy furnishes no good results in these cases, but that the operator takes a gambler's risk, with the odds heavily against him. Even when the conjugate measures from two and a half to three inches the Cæsarean section still seems to me to be the preferable choice, as with those dimensions, unless the transverse diameter happens at the same time to be spacious, a most exceptional occurrence, craniotomy is extremely hazardous, requiring a complete obstetrical armament, and great experience on the part of the operator to enable him to avoid inflicting serious if not fatal injury to the tissues between the child's head and the pelvic brim.

To be sure, Barnes asserts that "craniotomy done under fair conditions, such as are postulated for the Cæsarean section—that is, done at a chosen time with due skill, does not involve any natural mortality," but a careful perusal of all his subsequent remarks shows that the statement was intended to apply to women with minor degrees of contracted pelvis only.[1] Merkel[2] reports 100 cases of craniotomy from the Leipsic Clinic, with 8 deaths. He congratulates the clinic upon results never obtained elsewhere. Thorn[3] reports 80 cases from the Halle clinic, with 10 deaths. How simple these cases were, for the most part, is shown by the fact that in Merkel's list of 68 multiparæ 49, and in Thorn's list of 56 multiparæ 39 had previously given birth to living children.

[1] Barnes (British Gynecological Journal; part viii., 1866, p. 315) argues that by sacrificing the living child at term, the woman's life is saved, and subsequently, by the employment of premature labor, she becomes the mother of living children. But with less than three inches in the conjugate even premature labor affords but little encouragement so far as to hope for the preservation of the child.

[2] Arch. f. Gynäk., vol. xxi. p. 461.

[3] Thorn: Arch. f. Gynäk., vol. xxiv. p. 437.

Unquestionably defective diagnosis has so far in this country proved the most serious bar to progress in obstetric surgery. Every year I witness cases where horrible mutilations, due to ineffective attempts at delivery, have been inflicted before it was suspected that the obstruction was insurmountable. American woman have in times past enjoyed so large a degree of immunity from the more pronounced forms of dystocia, that our practitioners are too much disposed to regard Dame Nature as invariably kind to the parturient woman. Very few, indeed, attempt to realize the pernicious influence of spinal curvatures and hip disease upon the pelvic contours, or try to acquire the art of pelvimetry, and yet these belong to the A. B. C. of practice. A knowledge of them should constitute the difference between an educated physician and an experienced monthly nurse. This is delicate ground, and I do not refer to it in any carping spirit. I know that the lack of interest exhibited is due to a sense of the remoteness of the contingencies which will render such knowledge available. But more artificial modes of life, the pressure of population in large cities, and an unprecedented immigration are already working among us a perceptible increase in the causes of difficult labor, and with the departure of the old easy-going order of things comes the need of better equipment and an increased sense of responsibility on the part of medical attendants.

It is of good omen that Parish, armed with the weapons furnished by Harris's statistics, presented to the members of the American Gynecological Society, a year ago, a most eloquent appeal to give this subject their earnest thought and attention. I add my voice in the same direction from a sense of duty, and trust the time is at hand when all our leaders will lend their aid and advocacy to the work.

It is not to be expected that in every case, after a correct diagnosis has been made, and the necessity of the Cæsarean section has been recognized, that the practitioner should undertake the operation himself. It is not desirable that the Cæsarean section should be performed without assistants, without proper instruments, or without preceding orderly arrangements. Nor ought the operator to trust to the inspiration of the moment, but should possess at least a theoretical familiarity with every detail that experience has shown to contribute to the patient's safety. If the physician is timid, or is not so situated that he can operate under advantageous conditions, it will generally be easy, where the diagnosis has been made prior to the advent of labor, for him to entrust the case to an expert in abdominal surgery.

We have many laparotomists operating with brilliant results. They are not all upon the seaboard or in large cities, but are so scattered as to form centres accessible to extensive areas. They possess the experience, and needful preparation. With the general cooperation of our professional men, there is no reason why they should not rival the successes won in Leipsic and Dresden. They need, however, to open their eyes to the work of our neighbors, and to equip themselves for this special field of saving infant life. Mr. Tait has doubtless accomplished great good in teaching surgical means for the relief of tubo-ovarian disease, but it would be an added glory to our laparotomists, if they would on occasion round out their work of sterilising women by conferring upon them the blessings of maternity.

OBSERVATIONS ON THREE CASES OF SYMMETRICAL HAND AND FOOT DISEASE.

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THE cases reported below are given in brief but essential detail, with a view to illustration of one phase merely of the pathological condition which they are believed to represent, and which is described later.

CASE I.—C. S., aged nineteen years, a resident of Indiana, applied for advice on the 23d of May, 1887. He was an intelligent, bright-looking lad, then attending school. He used no tobacco in any form and denied all history of venereal disease. His father was living and in good health, fifty-four years of age; his mother the same, aged forty-nine. Four sisters were living and in good health. One brother died in infancy. One sister was married and had five healthy children. There was no history of cutaneous trouble in any member of the family. He gave no history of disease prior to the occurrence of the present ailment. All the bodily functions were properly performed. He stated that three years before the present date he noticed the first signs of his present disorder on the tips of the fingers. Somewhat later the toes were affected, and soon after that the palms of the hands and the soles of the feet. Since the beginning of his trouble the local affection had very slowly and gradually increased until the present condition has been reached. His complaint now is chiefly of stiffness and inflexibility of the hands and some soreness of the feet.

The state of the patient when examined was as follows: weight, 135 pounds, and gaining at the rate to be expected at his years. Vision, as tested by Snellen's types, in both eyes, normal. There was no sensori-motor evidence of disease of the nervous system. The hands and feet were symmetrically involved. The palms of the hands and the palmar faces of all the digits were the seat of a dense, inelastic, epidermal thickening, which had proceeded to such an extent as to render the complete extension of the digits slightly uncomfortable. The tylosis of the palmar surface of hands and fingers alike, was defined with tolerable clearness at the margins between the palmar and dorsal surfaces, to such a degree that the latter were, with only the exceptions noted below, exempt from involvement. Within the limits described, the sclerosis of the tissue was uniform and unbroken. The color of the palmar surfaces of the hands was markedly different from that of the plantar surfaces of the feet, having a reddish yellow tint, somewhat suggestive of the diffuse eczema of the palms observed in certain mechanics, whose occupation has induced such disorder. He gave no history of other subjective sensations in connection with the local ailment than

pain and a sensation of stiffness. A few linear fissures near the thumb were productive of slight discomfort. There was no history of itching, nor of any pathological discharge from the surface.

All the nails of the fingers of both hands were similarly involved and apparently to the same degree. The free border of each, which had evidently been carefully trimmed short, was tilted away from the axis of the phalanx; and in the angle thus formed, in consequence of a species of onychauxis, appeared a yellowish-white and irregular stratum of horny material. The body of the nail was manifestly thickened and its transverse diameter apparently increased. The nail-substance itself was dry, friable, rugous, and destitute of the normal polish. When closely questioned upon this point he stated that his nails were thicker and dryer than before, that they fractured with unusual readiness, and were on that account particularly tender. He had within a short time noticed some sweating of the hands, a circumstance which until lately had not attracted his attention.

Both feet were cold and damp, and were the seat of a slight bromidrosis. The sole of each, with the exception of a narrow portion contiguous to the instep, was the seat of a uniform, smooth, firm, inelastic tylosis, which spread irregularly upward around the point of the heel, and involved to a less degree, the plantar faces of the distal phalanges of the toes. The color of this indurated and thickened epidermis was a whitish-yellow, strongly suggestive of the hue of wet wash-leather. The coldness and dampness of the organs were not limited to the regions affected by the tylosis, but were not noticeable over the entire surface.

All the nails of the toes of both feet were involved in an onychauxis, precisely similar in character to that described in connection with the fingers. The nails were tilted up at the free border from the nail-beds, and between the two lay a substratum of sclerosed epidermis. The nails were lustreless, rugous, transversely enlarged, and cut short on account of their undue friability. The soles were the seat of a moderate anæsthesia.

The pulse was registered at 84 per minute. There was no history of headache or backache, no cardiac murmur, and no marked deviation from the normal standard in the tendon-reflexes.

Case II.—N. B., female, unmarried, aged twenty-four years, lymphatic temperament, a servant by occupation, was first brought to my clinic from the County Hospital, where she had been a patient for several previous weeks in the spring of 1884. She stated that her parents, two sisters, and one brother living in Scotland, were healthy and free from symptoms of her disease. She had been admitted to the hospital for relief of a symmetrical, recurrent tylosis of the feet, and failing to secure relief there applied elsewhere. Some months later, she was admitted to the Presbyterian Hospital and was under my observation in that institution till the spring of 1887. During all this time her physical symptoms were practically repeated in a recurring cycle of changes. About one year previous to her original admission to hospital, she first began to suffer from her disorder, though insignificant symptoms of it had been noticed some time before the date referred to above.

When carefully examined in hospital, her condition was as follows: Her intelligence was above the standard to be expected in one of her position. Her nutrition was fair, menstruation and functions of the alimentary canal properly performed. In the sitting posture, the cardiac pulsations averaged between fifty and sixty per minute, and were often counted at fifty. No organic disease of the heart could be recognized. The hands were constantly cold and bathed in a profuse sweat. This perspiration was poured out to such excess as to be a constant source of annoyance to her. All the nails of the hands were slightly discolored, somewhat rugous, their free borders slightly separated from that part of the nail-bed adjoining the tip of the finger. In the angle thus formed was a grayish, irregular mass of tissue, proliferated from the bed of the nail. This condition was very much less marked than the similar onychauxis to be noticed in the toes. There was no tylosis of the palms or symptoms of anæsthesia in those organs; the skin of the hands was soft and supple, though clammy and macerated with sweat.

The soles of the feet, including the plantar faces of the distal phalanges of the first and fifth toes, were symmetrically involved and displayed a uniform, grayish-yellow, thick, firm, and closely adherent callosity, whose surface was exceedingly rough and irregular. It was absent over but a small area of the sole, next the instep and plantar faces of the second, third, and fourth toes. On account of the habitual shedding and recurrence of this plantar shell, the feet had been at times exceedingly tender, and the inability of the patient to pursue her usual vocation on foot, resulting from this cause, had first induced her to seek hospital relief. While she was under observation, the truth of her statements relative to the periodical sloughing of these horny casts of the feet was abundantly substantiated. She was, while under treatment, subjected to repeated macerations of the soles of the feet for weeks at a time in water of various temperatures and medicated in various ways; in oil; with shampooings by the aid of green soap and alcohol; and treated also by external applications of caustic potash, mercury, tar, pyrogallol, and other substances, in the face of all which every six or eight weeks there was a reformation of the thick plantar callosity on each foot. When it was removed, either spontaneously or as a result of the soapings and scrapings practised by the patient herself, a sound tissue was never recognized beneath, but always an irregularly roughened, yellowish-gray and softish, macerated, horny layer of the epidermis. As a result, whether the cast were forming, formed, or recently shed, the soles of the feet were tender and locomotion correspondingly impeded. The feet were habitually cold and wet, and there was some anæsthesia as far as the ankle. Two peasized callosities on the dorsal surfaces of the fourth and fifth toes of one foot, participated in all these changes.

The nail of each toe was so deformed as to make the wearing of the usual coverings of the feet pain-

ful. Each nail was enlarged, irregularly thickened, unusually friable, deprived of its polish, and tilted up often at an angle of thirty degrees from its bed. In the groove thus formed had accumulated an irregular mass of tissue, which resembled to a certain extent the uneven surface of the sole of the foot when the callous plate which covered it had been partially scraped off. The dorsum of the foot, though cold and macerated with constantly effused sweat, was apparently otherwise unaltered. Throughout the time during which this patient was under observation, no tendency whatever to ulceration beneath the plantar encrustation could be recognized: nor did the patient appear to be in the slightest degree permanently affected by either the internal or external medication which had been pursued, the former including the administration of arsenic, cod-liver oil, and the ferruginous tonics.

CASE III.—In July of 1886, M. D., male, pattern-maker, a Scandinavian, twenty-eight years of age, with an excellent family history, no tobacco habits, and no record of venereal disease, presented himself, complaining of loss of hair on the lower extremities. He was well-nourished and weighed 175 pounds. He had for two years noticed the alopecia for which he sought relief. His lower extremities were numb at times; this sensation annoying him often at night when wakeful in bed. In the daytime he had felt occasionally as though the lower limbs were yielding under the weight of the body. Questioned more closely he gave no history of prior disease; but remembered that fifteen years before, in his thirteenth year, he had been struck on the vertex of the head with a brick. This had not produced insensibility, but somewhat later a degree of cephalic pain in the vertex, for which a surgical operation was performed in the site of his former scalp wound, that gave him relief. He was uncertain as to the precise nature of the operation, but believed that a piece or pieces of bone had been removed from the skull. Lately he had again suffered from a peculiar pumping pain in the head, which prevented steady attention to his work.

When examined, a linear cicatrix, two inches in length and slightly attached to the bone was discovered to the left of the anterior terminus of the sagittal suture. The hands and feet were habitually cold. Broad areas of the skin, vertically disposed, extended from the middle of each leg downward, chiefly on the outer aspect of each, where no single filament of hair could be found. Anæsthesia was marked in both lower extremities; more so on the right side where also the alopecia was most distinct. Each nail of those on the hands exhibited a distinctly outlined, and unusually large and pale lunula. The nails of the index and fourth fingers of each hand were singularly flecked with shining, white, stellate, and irregularly outlined, translucent maculations. Careful investigation disclosed no removal of the free border of the nails from the nail beds. Vision, tested by Snellen's types was normal; tendon reflexes unaltered.

Says Mr. Charles Atkin, in commenting on a disorder, which I take to be identical with that represented in the three cases described above: "As the pathology is as imperfectly understood as the treatment is unsatisfactory, I think every one who meets with a case is in duty bound to give a faithful account of its coincident symptoms and progress, so that in time a more definite idea of the disease may be formed." These pages are written with a view to making some response to that plea, and with a full conviction as to the unsatisfactory state of our knowledge on the general subject.

Of the several names for the group of disorders which in this connection we have reason to believe should be designated by a common title for identification, some are confusing, some indefinite, some imperfect, others positively misleading. The name *mal perforant du pied*, Latinized as "malum perforans pedis," the "perforating ulcer of the foot" of English and American authors, was first employed by Vésigné. It seems to be a permanent survivor of other names used in this connection, though defective in that we now well know the disease it designates may affect the hands as well as the feet, and may not be productive at any time of a perforating ulcer. The title of the present paper has been selected, not merely with a view to indicating the general character of the affection under discussion, but to permit of a brief glimpse over the wide field of which it is believed but a very small part is covered by cases of the kind represented in the clinical sketches just given.

Two chief reasons may be assigned for the uncertainty and confusion that seem to have attended the discussion of this subject. First, may be named the very wide multiformity of the symptoms presented in each case, as well as the differences exhibited by any two cases in the same general category. Second, as a result of the fact last stated, the circumstance that a number of English and French surgeons have named, described, and treated the prominent surgical complications of these singular hand and foot disorders, leaving to neurologists chief consideration of the nervous phenomena evident in another group; and to dermatologists the symptoms displayed for the most part in the skin.

Glancing over the entire field, it seems to me that we can establish tolerably distinct relations between four classes of symptoms displayed in these cases. They are not, strictly speaking, either stages or varieties of a single disease, though they may be indicative, in occasional instances, of periods of evolution of a single affection.

In the first class, relatively limited as to the number of symptoms displayed, we can recognize merely functional or transitory disturbances in the affected organs. Here, as in other classes, we find involved either the hands alone, or the feet alone, or both hands and feet. In this event a preponderance of symptoms may be noted either in the former or the latter. Among these symptoms may be named symmetrical hyperidrosis, limited to the organs affected, accompanied by a sense of both subjective and objective coldness. To this class belong the cases described by Mr. Hutchinson and other English authors, as "symmetrical asphyxia" of the extremities; and also those popularly named

in Great Britain "dying of the hands and feet," a phenomenon occasionally noted as following the immersion of these organs in cold water. Bromidrosis is another symptom noted by Atkin and others, both in hands and feet. The bond of union between these disturbances and those mentioned later is to be sought in the nervous and vascular systems. With the local phenomena are often associated a pulse ranging, with rapid variations in adults, from fifty to one hundred and twenty-five to the minute; local anæsthesia, claimed by Schwimmer as a constant symptom; suddenly occurring giddy and dizzy sensations; unusual spells, supposed to be of faintness; and vague pains, popularly believed to be rheumatic in character. No distinct line of demarcation separates the first from the second class of symptoms, many cases exhibiting the combined features of the two.

In a second and relatively large group may be collected the cases where, with or without, usually with, the functional disturbance named above, occur symmetrical structural changes in the skin and its appendages without ulceration or other destructive degeneration in the skin and subcutaneous tissue. This group includes many of the cases reported and described by dermatologists, and excludes many of those recorded by surgeons and neurologists. The first and most common of the symptoms here noted, in addition to the habitual blueness, coldness, and wetness of the hands or feet, or hands and feet, is a dystrophia unguim. This may involve all of the nails of the twenty digits, whether the two hands only or the two feet only are the seat of the hyperidrosis. Here the changes vary from slight roughness to extreme gryphosis. In some of Hutchinson's cases there was hyperidrosis with changes in every nail. Here should be included the same author's "true psoriasis of the nails contrasted with chronic onychitis;" his "chronic inflammatory disease of many finger-nails," and his "symmetrical slight disease of the nails in a young boy." In Elliott's case, lately discussed before the New York Dermatological Society, and reported under the title of "trophoneurotic affection of the nails," the nails of the ring-finger of each hand were first changed, and later all save that of the right index. In this connection the nail-change is described as a dystrophy, waiving for the present purpose any discussion of its, pathological character; though I may add that the term onychauxis, employed in the description of my two cases, expresses my belief in the fact that there is at first certainly hypertrophy, and not atrophy, of the nail-substance.

As strictly cutaneous symptoms in this group of cases, may be named tender, painful, or insensitive maculations of the hands or feet, or both; pigmented patches, both palmar, plantar, and dorsal in situation; livid, dull crimson, or lurid blotches; persistent "erythemas," vesiculation, "ichthyoses," and "eczemas." The latter terms may, in this connection, be misused, since they may have been employed by a writer unfamiliar with dermatological distinctions, in order to point merely to the dry, slightly reddish condition of the palms seen in the first of my cases, resembling certain forms of eczema squamosum. Another symptom less frequently observed is a local alopecia or hypertrichosis, the hairs either entirely absent or multiplying or growing to an unusual and conspicuous length over the organs affected. The symmetrical tylosis, or callosity, which may involve the palms or soles, either or both, is well illustrated by two of the cases here reported. It may be partial or general, and persistently of one type or characterized by a spontaneous exfoliation and recurrence of a horny cast of a part or the whole of a palm or sole. With it, as appears from what has preceded, there may be symmetrical involvement of all the nails; it is reasonable to believe, from the gross appearance of such nails, that their beds are the seat of precisely the same pathological process as that resulting in the tylosis. An unusual multiplication and cornification of the cells constituting the nail-bed would, particularly if that change were limited strictly to the nail-bed and did not affect the matrix of the nail proper, tilt up and distort the nail-substance so as to explain in part the clinical deformity described above. The free border of the nail would thus be carried further from the nail-bed than the proximal border, which, being next the matrix, would be least involved, and therefore far less dislocated.

With these phenomena may be observed the common anæsthesia, the loss of tendon-reflexes, the wetness of the hands and feet; and pains simulating those occurring in rheumatism. Kirmisson reports seven cases with symptoms of glycosuria; and Heusner confirms this with his observations.

In a third division may be grouped the symptoms exhibiting ulcerative or other degenerative sequelæ. Here may be catalogued most of the surgical cases first described by Nélaton, to which Vésigné gave his name, "perforating disease of the foot," including the well-known phenomena first completely described by Messrs. Savory and Butlin. Even in this group we find the name defective from a descriptive point of view. Hancock, Nélaton, Térillon, Treves, Trélat, and others, report symmetrical ulcers of the hands as well as ulcers of the feet, which conditions are also represented in a number of faithful wood-cuts. Here we find the surgeons dilating upon the difference between suppurating ulcers beneath a corn (Callender, Erichsen), a tuberculous ulcer of the sole, and the lesion of malum perforans pedis. Here we find them also figuring and describing the shortening of the digits, and even of the entire foot (Jones), resulting from the same process. Some report spontaneous healing; some, a healing only after operative interference; some, a recovery if only the hands and feet are disused—one reports a case with resulting bony ankylosis.

In the same group may be placed the reported cases of symmetrical ulceration and dry gangrene of the extremities. Here may be named Atkinson's "case of multiple cutaneous ulceration," ending in recovery, where the lesions of hands, arms, feet, and legs began with pruritus, anæsthesia, papulation, and vesiculation, and terminated in ulceration and loss of phalanges. In this case there were also buccal and labial ulcerations. Here, also, should be in-

cluded Smith's cases of "multiple cachectic gangrene," beginning with vesiculation and ascribed by the author to the occurrence of thrombosis, even though congenital syphilis was present in the two children. The cases reported by Eichhoff and Cæsar Boeck, cited by Dr. Atkinson as closely related to his, seem to me to have no such connection. Weiss accurately describes these conditions in discussing Raynaud's disease, referring them to a central neurosis, "involving symmetrical (for the most part) portions of the hands and feet (phalanges), more rarely other regions of the body, in gangrene of a peculiar character." One French author does not hesitate to set in the same category the symmetrical gangrenous affections of the feet occurring in the senile condition.

In a fourth and last group, may be collected the fatal cases, those fatal by reason of a gravity of the general pathological condition, aside from any septicæmia or other cause originating in local disease of the extremities. Here may be cited Hutchinson's "form of inflammation of the lips and mouth, which sometimes ends fatally, and is usually attended by some disease of the skin." Here we find reported, as in other of the grave cases, the same changes in the nails and symmetrical involvement of the hands and feet. In this group also the cases observed by neurologists may be included, which embrace Charcot's disease (pied tabétique); and a series of grave disorders, such as progressive posterior spinal sclerosis betrayed in hand and foot ulcerations.

Surveying this rather formidable category of symptoms, we find the widest divergence among authors as to their etiology and mutual dependence. One discovers an absence of the axis-cylinder in a nerve; another, thickening of the neurilemma; another describes evidences of arterial disease; yet another, explains an increase of endoneurium, by the results of pressure upon the hands and feet.

Kaposi, in the latest edition of his work, explains some of these cases by paralysis of the vaso-constrictors; some, by the occurrence of thrombosis. Others find the motor nerves intact and the sensory nerves only diseased. Hereditary influences, tuberculosis, and spinal injury, have been held to explain some cases. Duplay and Moret account for another case by discovering a hydatid cyst compressing the scrotum. Some have observed the disease only in women; and Ogston and Baker are inclined to this view. Treves and Fox, of New York, are on record as pronouncing some of them "purely local" manifestations. No more striking illustration of the purely neurotic origin of some of these cases can be cited than the interesting symptoms observed by Tilden, after injury to the median nerve of one side.

If we can agree that these phenomena are, from first to last, in some way related, we have taken at least one step forward. On this point it seems to me that most can agree. Bromidrosis, vesiculation, papulation, ulceration, hypertrichosis, alopecia, hyperidrosis, tylosis, onychauxis, or (if the name be preferred) distrophia unguium—these are certainly multiform symptoms, but they are, several of them, displayed in the immense majority of all cases grouped in the four classes described above. The most conspicuous likeness between them all is that, with few and usually grave exceptions, they are limited to the hands and feet, and the regions nearest those organs, such as the wrists, ankles, forearms, and legs.

Now there are few strictly regional affections of the body characterized by marked multiformity of symptoms. In syphilis, for example, the multiformity is remarkable, but never limited to one organ or set of organs.

In view of these considerations, the suspicion arises that, whether always of strictly trophoneurotic or vaso motor origin, the key to these resemblances and the link which connects them, is their distinctly regional limitation. They are all hand and foot diseases. These organs are farthest removed from the great centres of nervous and vascular force. They are also to a far greater extent than any portions of the body, subject to the important influences of the force of gravity and the effects of friction. Further, in any attempt at explaining some of this long series of symptoms, we cannot forget anatomical peculiarities of those organs possessing a striking significance. For example, Hoyer has shown that capillaries springing from the arteries, empty directly into lacuna like veins in the nail-bed. This is a provision undoubtedly intended to furnish a safety-valve for occasions of temporarily increased vascular pressure, as for example, when the hand is constricted in toil; and its working even in severe paroxysmal asthma is visible to the naked eye.

In brief, admitting all that Atkin says, in the sentence quoted at the outset of this discussion, relative to the imperfect knowledge of the pathology of this disorder, or this group of many symptoms, I have striven to call attention to the fact that regional limitations may explain some of the obscurity which has hitherto invested the subject. We shall, for example, search in vain for the name of any disease whose pathology will explain the chain of symptoms that has resulted in a given scar on a man's leg. But the mind so readily replaces the links that satisfy our conception of the case, that we follow its connections no farther. First came a venous enlargement, whether from traumatism, from pressure effects, or from causes unknown to us, operating on one leg and not another. Then followed an *eczema e venis varicosis*; then an ulcer; then cicatrization; and lastly, deep pigmentation in the periphery. We may not demand for these diseases of the hand and of the foot the same links of the self-same chain. We may, however, look to see some of their phenomena explained by as simple a process of reasoning.

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NOTES ON THE USE OF MEDICATED RUBBER PLASTERS IN CERTAIN CUTANEOUS DISEASES.[1]

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During the past few years the subject of fixed dressings in the treatment of skin diseases has received considerable attention, and as a result, important therapeutic advances have been made. To-day the gelatin, collodion, gutta-percha solution, and similar dressings are widely employed and in some instances seem indispensable. Unna's plasters belong among this class of applications, and are excellently made and efficient, but unfortunately are in this country expensive and difficult to obtain.

About a year ago the idea of incorporating medicaments in the well-known rubber plaster suggested itself, and at my solicitation, the manufacturers, Seabury & Johnson,[2] kindly made a number of plasters —containing pyrogallic acid, salicylic acid, chrysarobin, ammoniated mercury, and oxide of zinc. They were remarkably adhesive, and when once applied would remain several days or even weeks. At the time the plasters were sent me, duplicates were forwarded, so I have been informed, to several other gentlemen interested in dermatological practice, of whom one or two have already reported on their use. While these plasters are an addition to our means of treating special cases, it must be admitted that as at present manufactured their use is somewhat limited. They are not adapted for acute and subacute cases. In this respect they are inferior to Unna's plasters referred to. The manufacturers show every disposition to perfect them, and doubtless in a short time these plasters will be found all that is desired. Their special field, according to my experience, is chiefly in the treatment of chronic, sluggish cases of eczema, in the larger patches of psoriasis, in ringworm of the scalp, in callosities, and in lupus and epithelioma. In these diseases, so far as my observations have gone, the sample plasters sent me have been of positive value.

In several cases of chronic papular and scaly eczema, in which the disease was limited to one or two palm-sized patches, a plaster containing twenty per cent. of ammoniated mercury was employed; the results were satisfactory. A single plaster would remain on for one or two weeks without loosening, a renewal being made about every ten days. The parts became gradually paler and the infiltration disappeared.

In psoriasis, in the large thickened chronic patches, chrysarobin plaster acts admirably. The scales are first removed by washing, the plaster cut to fit the patches and applied. As a rule, it remains adherent a week, and should then be removed, the parts washed and a fresh plaster applied. In the several cases of this disease in which it was employed, the objectionable properties of the remedy as ordinarily used, were not observed. In a few instances a single application of the plaster was sufficient to promote the disappearance of the diseased area, but in others a second and even third application became necessary. In those cases in which the disease is more or less general, and the spots small, the plaster treatment is not practicable; but in those instances where the disease persists in several large, inveterate patches it proves particularly useful. Chrysarobin plaster is serviceable, also, in ringworm. In three cases of ringworm of the scalp, in which the affection existed as two or three well-defined areas, the plaster was used with favorable results. The hair on and surrounding the diseased patch was removed by shaving, and the plaster applied. A renewal was made every week or ten days, the diseased stumps coming away with the old plaster. After six to eight weeks' treatment the disease seemed at an end, and the applications were discontinued; several months later, in two of the cases at least there had been no return, the third case failing to report.

A plaster of salicylic acid, ten to twenty per cent. was found of advantage in callosities. In one case in which both soles were involved to a marked degree, the condition was removed in a few weeks. The plaster remained adherent for a week without renewal. In certain cases of lupus the advantages of a fixed dressing are evident. In two suitable cases a pyrogallic acid plaster, twenty per cent., was applied, a renewal being made every third or fourth day. The result in these instances was equal to that obtained from the use of a pyrogallic acid ointment, without the additional trouble and uncleanliness of the salve applications.

The same may be said of the use of this plaster in the treatment of certain cases of epithelioma. In this disease, as well as in lupus, where the action of

[1] Read at the eleventh annual meeting of the American Dermatological Association, September 1, 1887.

[2] These plasters are equally well made by Johnson & Johnson; their samples sent me, I have since used with good results.

the remedy is necessarily destructive, the plaster must be renewed at frequent intervals.

Without additional comment, the advantages of these plasters may be briefly expressed in the words cleanliness, simplicity, and saving of time and trouble. As already intimated, while their field of usefulness is at present somewhat restricted, it may be expected that as the various plasters are finally perfected and made to meet the requirements, their therapeutic application will be considerably broadened.

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ANTIFEBRIN IN TYPHOID OR ENTERIC FEVER.

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THE alleged superiority of antifebrin over antipyrin in reducing excessive temperature without injury, led me to employ it during my present term of service in the German Hospital. The few attempts made to reduce high temperature in enteric fever, herewith recorded, present it as a much more dangerous agent than I have found antipyrin to be in a very extensive experience with that agent.

So powerful an agent has antifebrin proved in the few cases in which I have used it, that, as will be seen, three grains, or even one, will effect very decided results on temperature.

The inference is that small doses should be prescribed, say three grains, and that the patient should be visited at the end of an hour and examined as to the reduction of temperature before a second dose is administered; similar precaution being taken as to ordering a third dose; and that when the influence is seen to be marked, subsequent doses should not exceed one grain. The dose usually recommended has been eight grains. This has been far too large in my hands.

Temperature records are appended, illustrating the effect of antifebrin, and showing a remarkable and rapid return of high temperature after initial reduction, with subsequent reduction, and rebound next day without further administration of the drug.

Recent numbers of foreign journals, received since my own observations have been made, contain cautions as to the use of antifebrin, from experience similar to my own.

I append notes of examples of the effects of antifebrin, manufactured by Merck, on cases of enteric fever:

CASE I.—Boy, aged seventeen. Ninth day of disease, temp. 103.6°. Seven grains *antifebrin given at* 5 P.M., *and repeated in one hour.* Effect: *1st day* of antifebrin, 6 P.M., temp. 103.2°; 8 P.M., 98°; 9 P.M., 96.4°; 12 midnight, 97°. *2d day*, 4 A.M., 102.6°; 6 A.M., 103°; 8 A.M., 103°; 9 P.M., 96°; 10 P.M., 97.4°. *3d day*, 2 A.M., 102.2°; 7 A.M., 102.8°; 7 P.M., 104.8°. *five grains antifebrin given:* 8 P.M., 101.2°; 10 P.M., 99°; 12 midnight, 101.6°. *4th day*, 4 A.M., 104.2°; 8 A.M., 102.8°; 7 P.M., 103.8°, *three grains antifebrin given;* 10 P.M., 98°; 12 mid night, 98.4°. *5th day*, 4 A.M., 104.8°; 7 A.M., 101.2°. Orders to discontinue antifebrin and resume routine treatment of the ward.

CASE II.—Married woman, aged twenty-two. Fourth day of disease. Evening temp., 100.4°; fifth day, *first day of antifebrin*, 7 P.M., temp. 103°, *three grains antifebrin given;* 8 P.M., 98°; 10 P.M., 96°. *2d day*, 2 A.M., 98°; 4 A.M., 95°; 6 A.M., 98°; 8 A.M., 102°; 7 P.M., 99°. *3d day*, 8 A.M., 96.6°; 8 P.M., 103.8°, *one grain antifebrin given;* 9 P.M., 99°; 12 midnight, 98°. *4th day*, 4 A.M., 99°; 7 A.M., 103°; 5 P.M., 103°. *5th day*, 6 A.M., 98°; 5 P.M., 100°.

CASE III.—Boy, aged nineteen. Temp. 5 P.M., 103°. *five grains antifebrin given:* 8 P.M., 101.4°; 9 P.M., 100°; 10 P.M., 97.6°. *2d day*, 2 A.M., 99.2°; 7 A.M., 99.8°; 7 P.M., 102.8°. *3d day*, 7 A.M., 100°; 5 P.M., 102.6°.

CASE IV.—This was a case of so-called recurrent typhoid, reëntering the hospital: 7 P.M., 104.8°; *three grains antifebrin given;* 10 P.M., 100.2°; 12 midnight, 103.2°. *2d day*, 4 A.M., 102°; 7 A.M., 103.8°; 5 P.M., 103 6°.

CASE V.—Temp. 8 P.M., 104.2°, *one grain of antifebrin given:* 10 P.M., 104°; 12 midnight, 104°; *two grains antifebrin given:* 2 A.M., 102.8°; 8 A.M., 102.8°; 5 P.M., 102°.

HOSPITAL NOTES.

PHILADELPHIA HOSPITAL.

Service of BARTON C. HIRST, M.D.

HIGH GRADE OF RACHITIC PELVIS; LABOR INDUCED; PRESENTATION OF TRUNK; COMBINED VERSION BY THE HEAD; SUCCESSFUL DELIVERY BY THE POULLET-V. HECKER FORCEPS.

(Reported by RICHARD C. NORRIS, M.D., Resident Physician.)

M. H., aged twenty-two years, colored, II-para, was admitted to the hospital with a history of having ended her last menstrual period on December 1, 1886. The customary examination with pelvimeter was made, and the following diameters were noted: Iliac spines, 20½ cm.; iliac crests, 23½ cm.; external conjugate, Baudelocque, 18 cm.; internal conjugate, diagonal, 10 cm.; true conjugate, estimated, 8 cm. Vaginal examination; pelvis smooth; promontory well marked and sharply defined. Husband of patient brawny and large-boned. Abdominal palpation showed the child to be well developed in size, occupying a transverse position, the breech somewhat lower and to the left. Fœtal heart sounds could not be heard, the left side being low down.

Induction of labor was proposed, and consented to. On July 28th a solid, flexible, hard-rubber bougie, No. 12, was inserted between the posterior uterine wall and the membranes, and pushed obliquely upward, toward the left about six inches, and allowed to remain. Twenty-four hours later the os had softened somewhat, and a second bougie, No. 17, was similarly introduced, and both allowed to remain twelve hours longer. At this time the os was slightly dilated, and quite soft. The pains had not been at all marked. Barnes's dilators (three sizes) were then introduced at short intervals, and the cervix well dilated. The membranes were then

ruptured, and an attempt was made at the same time to convert into a breech by external manipulation. This failed. The patient was etherized, and combined version by the head to left occipito-anterior position was followed by the application of the Poullet_v. Hecker forceps. The head was soon brought below the brim of the pelvis, and the delivery was then completed with Simpson's forceps.

Throughout the management of the case there was a striking absence of uterine contractions. The child is quite vigorous, weighs five pounds and six ounces, is seventeen inches in length, and has the following measurements of the head: Bitemp., 7 cm.; biparietal, 8¼ cm.; occip. frontal, 10½ cm.; occip. mental, 12 cm.; trachelo-bregm., 8 cm.; circumference occip. frontal, 31 cm.; circumference trachelo-bregm., 29¼ cm.

The mother recovered with no bad symptoms, and at this time (seventh day) has had no elevation of temperature, pain, tenderness, or discharge, and promises a speedy convalescence.

MEDICAL PROGRESS.

The Influence of Antifebrin, Salicylic Acid, and Carbolic Acid on Bodily Temperature.—Dr. Hare, in a series of researches reported in the *Therapeutic Gazette* for June, July, and August, 1887, reaches the following conclusions:

1. *Antifebrin* effects *marked* depression of normal bodily temperature.

2. During the depressing action of antifebrin on normal temperature it seems to cause a slight fall in arterial pressure, although this is by no means a constant result, as it may cause a rise.

In the opinion of the writer, however, this drug in lowering temperature acts as an arterial sedative.

3. Notwithstanding the fact that antifebrin influences to such a marked degree normal bodily heat, it seems to possess little power against the pyrexia produced by the introduction of pepsin into the blood, since under these circumstances the hitherto depressed pressure rises, as does also the bodily heat.

This curious fact must depend on some organic changes produced by the digestive ferment.

4. This drug reduces *normal* temperature apparently by influencing both production and dissipation.

5. Antifebrin in fever chiefly reduces the high temperature by decreasing heat production, and is, therefore, a valuable antipyretic.

1. *Salicylic acid* has the power to reduce slightly normal bodily heat.

2. *Salicylic acid*, according to the writer's experiments, has but little power over pyretic temperature.

3. *Salicylic acid*, when acting on either normal or abnormal temperature, does not seem to have much influence on the circulation either in regard to pulse-rate or arterial pressure. Any change, when it occurs, seems to be an increase of arterial pressure rather than a decrease, and this increase occurred more markedly in the normal than in the pyretic animal.

4. *Salicylic acid*, in reducing normal temperature, probably acts on both functions, namely, production and dissipation, while it seems to act very uncertainly and irregularly when reducing high temperature, failing frequently, as before stated, to prevent an increase of bodily heat.

1. *Carbolic acid* possesses considerable power in lowering normal bodily temperature.

2. It possesses more influence over pyretic temperature than does salicylic acid, generally preventing a rise or causing a fall of temperature, but sometimes failing to do so.

3. *Carbolic acid* probably decreases arterial pressure when lowering temperature.

4. That its mode of decreasing normal bodily temperature is as yet not fully understood, although it would seem probable that it acts on both heat functions.

5. When influencing bodily heat in fever it acts chiefly by decreasing production, although it affects both functions.

The Treatment of Abortion for Three Years in the Obstetrical Clinic of Florence.—Fasala has observed the following rules in the treatment of abortion, with good results:

1. An expectant course is pursued when the cervix uteri is closed, and can be dilated with difficulty, and if no signs of the decomposition of the fœtus are present.

2. Under conditions favorable for the introduction of instruments or the hand, the ovum and its appendages are promptly removed.

3. If decomposition has begun, the cervix is dilated by laminaria tents or metallic dilators, and the ovum is removed.

4. Intra-uterine injections for antisepsis are made with warm solutions of bichloride of mercury, 1 to 2000; in case of hemorrhage, hot solution of bichloride of mercury, 1 to 4000, and tamponing the vagina, are used.—*Annali di Obstetricia*, March, 1887.

Antipyrin in Scarlatina and Bronchitis among Children.—Friedländer, of Russia, reports fourteen cases of scarlatina, all of whom recovered under the use of antipyrin in doses of nine grains once to three times in twenty-four hours. Profuse perspiration, fall of temperature, and in nearly all cases refreshing sleep of two hours, followed the use of the drug. The dosage was according to age, the maximum dose is that stated. In acute bronchitis nine grains of antipyrin sufficed to influence children under two years of age favorably for twenty hours; while thirteen grains, with children under five years of age, were sufficient to lower temperature for twelve or fifteen hours; this dose was generally given twice in twenty-four hours. Profuse perspiration, lessened cough, sleep, and general improvement followed. During convalescence, half the doses given during the height of the disease were used. In addition, the following was found useful:

℞—Caffein . . . . gr. $\frac{5}{6}$ to gr. 3.
Sodii bicarb. . . . gr. 23 to gr. 45.
Aquæ fœniculi . . 3 15.
Syr. ipecac $\bar{a}\bar{a}$. . . 3 7½—M.

Sig.—One-half to one teaspoonful every half hour or every two hours.—*Therapeutische Monatshefte*, August, 1887.

The Action of Tobacco.—Recent observations by Russian experimenters have resulted in the following

conclusions. The assimilation of nitrogenous matter is lessened by tobacco. Digestion is prolonged. The assimilation and elimination of potassium iodide was accelerated by smoking. The influence of tobacco is most marked at the commencement of its use. The examination of 1000 workers in tobacco, compared with a series of control experiments on animals, resulted in finding among the workmen dilatation of the pupils; cardiac neuroses; exaggerated tendon and vasomotor reflexes; trembling hands; dyspnœa. Headache, gastralgia, cramps, and nervous cough, were also present. The respiratory organs were most frequently attacked after the nervous system.

Phthisis was not especially frequent.

The same symptoms were produced by injecting $\frac{1}{10}$th to $\frac{1}{5}$th of a drop of nicotine in rabbits, $\frac{1}{20}$th to $\frac{1}{10}$ of a drop in dogs, and keeping them also in a tobacco-impregnated atmosphere.—*Bulletin Général de Thérapeutique*, July 15, 1887.

SPLENOTOMY FOR LEUCOCYTHÆMIA.—DR. STRONG reports in the *Western Medical Reporter* of September 15, 1887, the removal of a leucocythemic spleen weighing nine pounds nine ounces. The spleen was freely movable, no adhesions to the abdominal wall or intestines existing; the tail of the pancreas was so firmly united to the hilus of the spleen that no attempt was made to separate it, it was ligated with the pedicle of the splenic tumor. The greater curvature of the stomach was adherent to the spleen and was separated, and from this surface blood oozed persistently.

The patient died four hours after the operation from hemorrhage from the adherent surfaces which had been separated. Microscopic examination of the blood before operation showed a leucocythemia of 50 per cent.

PHOSPHATE OF COPPER IN THE TREATMENT OF PHTHISIS PULMONALIS.—The following formulæ have been employed by LUTON, of Reims, and are reported by him in the *Revue Générale de Clinique et de Thérapeutique* of September 8, 1887:

℞.—Cupri acetat. neut. . . . gr. ½.
Sodii phosphat. cryst. . . . gr. ¾.
Liquiritiæ pulv.
Glycerin. . . . . aa q. s.—M.

For each pill.

Also,

℞.—Cupri acetat. neutral . . . gr. ½.
Sodii phosphat. crystal. . . gr. 8½.
Mucilag. acaciæ.
Aquæ . . . . . ℥ss.—M.

Sig.—Dose, a teaspoonful as indicated.
For hypodermatic use.

℞.—Cupri phosphat. (newly precipitated) . . . . . 1 part.
Glycerin.
Aquæ dest. . . . . aa 2½ parts.

To be mixed at the moment of administration.

PHYSIOLOGICAL PROPERTIES OF ACETO-PHENETIDINE.—HINGSBERG and KEST are quoted by the *Centralblatt für die medicinischen Wissenschaften*, No. 9, 1887, in reporting their experiments with this substance as follows: It is a derivative of anido-phenol, crystalline, very soluble in ether and acetic acid, less soluble in water. Doses of 15 to 30 grains produced no physiological effects upon dogs. From 45 to 75 grains produced respiratory paralysis, vomiting, stupor, and cyanosis, which disappeared after a few hours. When used as an antipyretic a dose of 8 grains lowered temperature several degrees in three or four hours, producing moderate transpiration without collapse or cyanosis. Arterial tension was increased. The urine of animals which took this substance was colored yellow; when hydrochloric acid was added the urinary salts were precipitated. Salts of copper were reduced, and polarization to the left occurred. The substance is an analogue of antifebrin, which it resembles.

A SUCCESSFUL NEPHRORRHAPHY.—DR. LLOYD reports in the *Practitioner* for September, 1887, his method of operating in a recent successful case as follows:

I purposely stripped off a portion of the capsule over an area one inch in diameter, and then secured the kidney to the lumbar tissues by carrying two stout catgut sutures, by means of a medium-sized curved needle, through the skin, fascia, and muscles, then entering the proper capsule and kidney substance close to one edge of the exposed area, passing completely across and beneath this area to emerge at a point corresponding to that of its entry on the opposite side, and then returning to the surface through muscles, fascia, and skin. A stout drainage tube was inserted down to the kidney. The lips of the wound were closed with deep silver sutures, and finally the transfixing gut ligatures were securely tied, thus bolting up the raw kidney surface to the deeper end of the wound through the soft parts. After several months the result is perfectly satisfactory: the organ which formerly "jumped" from the loin on to the front of the lowest lumbar vertebra, each time the patient tilted toward the opposite side, is now firmly at anchor and free from the slightest movement. This methodical excision of kidney capsule is, I believe, novel, and appears to have certain advantages over other procedures. Adhesions forming from the more lowly organized fibrous tissue of the kidney capsule are less abundant than those which will develop when the more highly organized kidney substance is concerned. Again, there usually remains a certain thickness of delicate connective tissue mesh about the capsule after we look upon it as being quite bared, and it is to this loose tissue that the connecting fibres will often form attachments. This delicate intervening layer may subsequently stretch indefinitely, just as it has done before to allow of that mobility to remedy which the operation is performed. When, on the other hand, the kidney substance is uncovered, there can be no doubt that the resulting scar will be incorporated with the organ we wish to secure, and not merely with a layer of yielding tissue around it. The kind of cicatrix we desire in nephrorrhaphy is like that which results from certain diseases attended by loss of bone substance.

HOT WATER ENEMATA.—TRIPIER, of Lyons, has obtained excellent results with enemata of very hot water in rectal and vesical tenesmus in those afflicted with locomotor ataxia, and also lead colic. His results

were especially striking with dyspeptic patients. For children from eight drachms to one ounce was used; for adults, a quart; the temperature of the water was from 113° to 118° F.—*Journal de Médecine*, July 31, 1887.

Mydriatics and Their Uses.—Dr. Jackson, of Philadelphia, is quoted as follows by the *Ophthalmic Review* for August, 1887, on this subject:

Simply to dilate the normal pupil, a single drop of either of the following solutions suffices:

Cocaine hydrochlorate, gr. j, water, ♏ xxv,
or about 1 to 25;
Homatropine hydrobromate, gr. j, water, f℥j,
or about 1 to 500;
Atropine sulphate, gr. j, water, f℥v,
or about 1 to 2500;
Duboisine sulphate, gr. j, water, f℥x,
or about 1 to 5000;

or daturine, hyoscyamine, or hyoscine salts used of the same strength as duboisine.

Of the above the homatropine solution renders the pupil rather the most rigid, and its effects pass off in from twenty to fifty hours, but *cocaine is the most generally valuable dilator of the pupil*. The dilatation it produces lasts but ten or twenty hours, is never so great in strong as in feeble light, so that there is less annoyance from exposure to the light; it produces proportionately the smallest impairment of accommodation; and the dilatation it produces can be promptly overcome by the use of eserine, making it especially valuable after middle life, when there is a chance of the occurrence of glaucoma. And this drug has yet another advantage. In spite of the readiness with which it yields to myotics, in spite of its inability to prevent entirely the reaction to bright light, tested in a weak or moderate light, *cocaine produces a wider dilatation of the pupil than any other mydriatic*. And this superior power of cocaine is especially manifest in old people, whose pupils often do not dilate well under other mydriatics.

To paralyze the accommodation completely, from two to five instillations of a drop of either of the following solutions usually suffice:

Homatropine hydrobromate, gr. x, water, f℥j,
or about 1 to 50;
Atropine sulphate, gr. iv, water, f℥i,
or about 1 to 120;
Duboisine sulphate, gr. ij, water, f℥j,
or about 1 to 240;

or daturine, hyoscyamine, or hyoscine in the same strength as duboisine. Homatropine should be instilled at intervals of from five to fifteen minutes; with the other mydriatics, to avoid constitutional effects, the intervals must be much longer. Cocaine in any strength cannot, in most cases, completely control the accommodation.

Of the above, for diagnostic purposes, homatropine is to be preferred. It reduces to a minimum the period of disability for eye work, recovery from it being nearly complete in from thirty-six to forty-eight hours against five or six days for duboisine or ten or twelve days for atropine. It causes no noticeable or distressing symptoms, like the dryness of the throat, flushing of the surface, incoördination of motion, or even delirium, which are liable to follow the use of the other mydriatics, although it does usually to some extent influence the action of the heart.

Nasal Croup.—Hartmann, of Berlin, reports six cases of this affection which occurred epidemically in children between three and nine years old. The disease pursued a mild course, becoming a simple nasal catarrh in from eight to fourteen days. Treatment was removal of the membrane by cotton, and the free use of iodoform in powder.—*Deutsche medicinische Wochenschrift*, July 21, 1887.

Abdominal Gestation; Operation; Recovery.—Takaki, a Japanese Surgeon, reports in the *Sei-I-Kwai Journal* for July, 1887, the case of a multipara, aged twenty-eight, who gave a history of irregular discharges from the uterus, abdominal pain, and the presence of a tumor. On examination, a tumor was found on each side of the abdomen below the umbilicus. They were elastic, painless, and not connected with the uterus. Aspiration of the left tumor gave blood; of the right fluid resembling ovarian fluid. On opening the abdomen, encysted abdominal pregnancy was found. The fœtus and appendages, the sac and its adhesions were removed, the abdomen disinfected, and closed by deep and superficial stitches. Recovery followed in fifteen days. The partially disorganized fœtus weighed about one and a quarter pounds.

Treatment of Pediculi.—Vartanian, of Constantinople, has had excellent results in the destruction of these parasites by frictions with flannel dipped in the following:

Acid salicylic	2 to 3 parts.
Vinegar	25 "
Alcohol (80°)	75 "

—*Revue de Clinique et de Thérapeutique*, July 28, 1887.

Disinfection of Typhoid Stools with Boiling Water.—Wiltschur, in the *Vratch*, No. 26, 1887, has tested the action of boiling water upon cultures of typhoid bacilli and found that twice the volume of boiling water will destroy bacilli, and three times their volume will destroy spores of the bacilli. In experimenting upon typhoid stools he found that from two and a half to three volumes of boiling water destroyed bacilli in stools, and four volumes were sufficient to destroy their spores.

The Effect of Antifebrin upon the Blood.—Henocque reported at a recent meeting of the Society of Biology of Paris, his observations on the blood of animals intoxicated with antifebrin. The change of oxyhæmoglobin to methæmoglobin is the phenomenon observed. In the human subject, while therapeutic quantities of from 15 grains to 50 grains daily are used this change is only observed when cyanosis supervenes. The quantity of oxyhæmoglobin must have been reduced to 6 5 per cent. before the line characteristic of methæmoglobin is seen in the spectroscope. Clinically this condition may be diagnosed by observing the capillaries of the thumb. When in those vessels the percentage becomes eight it is indicated that the activity

of nutritive processes is much lessened, and the drug should not be used continuously.—*Revue Générale de Clinique et de Thérapeutique*, August 4, 1887.

CALOMEL, HYPODERMATICALLY.—SMIRNOFF, of Vienna, proposes a mixture of one part calomel and ten parts glycerine, which he puts in dark glass bottles, tightly stoppered with glass, each containing thirty grains of calomel and five drachms of glycerine. When required for use, the bottle is to be thoroughly shaken, and the hypodermatic syringe introduced through the wide mouth.—*Therapeutische Monatshefte*, August, 1887.

TREATMENT OF SCARLET FEVER.—The *Lancet* of September 3d, states that the present epidemic in London is, for the most part, of a mild nature, but considerable attention has to be given to the throat, which seems to suffer in a marked degree, the glandular swelling being correspondingly marked. Hence it will be found that gargles of all kinds, and especially those of an antiseptic nature, are freely used, together with compresses of various degrees of heat and moisture applied to the neck. Most practitioners, even those of the most expectant schools, employ topical applications to the throat and nose. Many articles are used to relieve the thirst and sensation of dryness, but nothing is more effective than ice and a little raspberry vinegar. It is important to keep the nostrils and nasal passages sweet and clean. For cerebral symptoms, nothing is better than the application of cold, either in the mild form of lint soaked in iced water and applied to the shaven head, or in the more effective capilline tubes, with irrigation. Compression of the carotid arteries and bleeding are seldom practised nowadays, either in scarlet or any other fever. Aconite in minute doses, frequently repeated, is still the favorite drug of many practitioners, but its employment needs the exercise of clinical discretion, especially in children. Actual bathing in cool or tepid water is practised by but few physicians, though the number of practitioners who recommend the use of cold or tepid sponging, the patient lying in bed on a mackintosh, appears to be largely on the increase. Most of the alleged specific and curative agents have long since lapsed into discredit. Belladonna finds but few adherents, and carbonate of ammonia almost none. Considerable difference of opinion exists on the merits of inunction with fat, cold cream, and the like, two of the most recent authors on the diseases of children taking opposite views, DR. GOODHART advocating and DR. ANGEL MONEY opposing universal inunction, though the latter sees no objection to relieving the tension of the palms and soles by the application of geoline or vaseline scented with eucalyptol.

TERPINOL IN PILLS AND CAPSULES.—The following formulæ are advised by RABOW in the *Therapeutische Monatshefte* for August, 1887:

℞—Terpinol.
Ammon. benzoat.,
Ceræ flav.,
Mass. pil. . . . . āā ʒ 2½.
Mucilag. tragacanth. . . q. s.
Fiant pil. 100 in num.

Terpinol may be given in capsules as follows:

℞—Terpinol.
Sodu ben. . . . . āā gr. 15.
Sacch. alb. . . . . q. s.
For ten capsules.

Sig.—One pill or capsule every one or two hours.

HYPODERMATIC INJECTIONS OF SOLUTIONS OF MARINE SALT FOR ANÆMIA.—HEGAR has obtained good results from the injection of a solution of 6 to 1000 of marine salt, pure and recrystallized, in anæmia. Sphygmographic tracings showed an improved condition of the circulation.—*Revue de Thérapeutique*, August, 1887.

THE BEST SUTURE MATERIAL.—VEIT, of Berlin, in an article in the *Therapeutische Monatshefte* for August, 1887, decides in favor of catgut, concluding that the healing of the wound does not depend upon the suture material used, but upon its antiseptic condition, and this is more easily secured with catgut than with silk; every physician can easily possess antiseptic catgut, and its absorption when allowed to remain in the tissues, is also greatly in its favor.

ODONTALGIA OR NEURALGIA?—The great difficulty occasionally experienced in diagnosticating whether neuralgic pain of the fifth nerve is due to peripheral irritation from disease of the teeth or to some affection of the nerve trunk, made PROF. VICTOR HORSLEY'S paper on this subject at the Odontological Society of considerable interest, especially to dental surgeons. The principal points of distinction may be summed up under the following heads: 1. Trophic changes, such as muscular wasting in the parts to which the pain is referred, chronic congestion, or alternating dilatation and constriction of the bloodvessels, point to mischief in the trunk of the nerve. 2. Alterations in sensation, anæsthesia or hyperæsthesia of the skin, especially when gently touching the skin causes extreme pain, while firm pressure causes no pain at all, are, he believes, never due to dental irritation. 3. The origin and character of the pain are sometimes useful as a means of diagnosticating the two conditions. When the pain begins in the skin or bone, and subsequently is referred to the teeth, the probability is that the lesion is in the nerve trunk; if it is stated to begin in the teeth, it may or may not be due to them. Professor Horsley expressed the view that *constant* pain is in most cases of peripheral origin, whereas intermittent pain is due to trouble nearer the nerve centre; but this is opposed to the experience of most dental surgeons, intermittent pain being a frequent accompaniment of dental disease. Lastly, the existence of "tender spots" along the course of the nerve or its branches, is generally an indication of irritation along the whole course of the nerve, but occasionally occurs in cases of peripheral irritation.—*Lancet*, September 3, 1887.

FIBRINOUS PNEUMONIA.—CASPAR, of Greifenberg, derives the following conclusions from the study of twenty cases occurring in his practice, and a review of the literature of the subject:

Fibrinous pneumonia is an infectious disease; contagious; having an incubation period of generally four days. Low temperatures, moisture, and strong winds, favor its inception and spread.—*Berliner klinische Wochenschrift*, July 25, 1887.

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THE VALUE OF THE SULPHATE OF SPARTEINE.

WITHIN the last year or two this drug has been tested both by the bedside and in the laboratory by so many observers that we have at the present time a large mass of literature concerning it. But little investigation as to its influence on the system has been undertaken either in this country or England, by far the greater number of results having been obtained by French or German observers.

Unfortunately these reports have produced such varying and opposite results that the clinician hesitates to use the drug, since, while one writer lauds it to the skies, another may report absolutely negative or untoward effects from its use. MASIUS, of Brussels, has, perhaps, more carefully than any other observer, tested its action from a physiological standpoint, and reaches the following conclusion, that in small doses it does not influence the circulation, in moderate doses it depresses the vagus and accelerates the pulse-rate with a corresponding decrease of the quantity of blood expelled from the heart at each contraction. In poisonous doses it palsies the pneumogastric and produces asphyxia, and in the healthy subject has no influence on the renal excretion. He also believes that the influence of the drug on the heart and kidneys is uncertain and not to be depended upon.

On the other hand, GLUZINSKI in *Fezegad de karski*, No. 1, 1887, and *Vratch*, No. 3, 1887, has obtained results, which in some points are absolutely contradictory to those of Masius. Thus, he found that sparteine slows the heart and increases blood pressure in the first stage after its administration, that in the following stage the pulse may become rapid, while in the third stage the pulse again becomes slow and the pressure high. He explains the secondary condition by imagining some pathological change in the irritability of the vagus or heart muscle, which change only lasts until the advent of the third stage. The third stage is accompanied by failure of respiration, and it is therefore evident that Gluzinski is right in confining the drug's usefulness, as a therapeutic agent, to the first period. He believes it to be less powerful than digitalis, but more rapid in its action.

The researches of VOIGT and LEO are equally contradictory. The former found that sparteine in the dose of $\frac{1}{65}$ to $\frac{2}{85}$ of a grain stimulated the heart, increased its contractions, and raised the blood-pressure. He does not think it, however, a diuretic of the first rank. He would recommend its use in valvular disease with failing compensation, or in those cases where compensation being complete the heart needs a tonic and sedative, and also in the palpitation of "weak heart" without valvular disease. Lastly, he recommends its use in pericarditis and as an adjuvant to digitalis. Leo, who, in comparison with Voigt, gave enormous doses of the drug (as much as one and a half grains) reached favorable results in only nine out of twenty-four cases, and in these nine, objective improvement was scarcely noticeable. In eight others subjective improvement occurred, while in seven no result whatever was obtained.

In Leo's hands the drug did not increase the blood-pressure materially, but did, in some cases, increase diuresis. Here, again, Leo's results clash with those of GERMAIN SÉE, who places sparteine and digitalis side by side, as increasing arterial tension. Notwithstanding the large doses used, he observed no toxic effects.

In the *Berliner klin. Wochenschrift* of September 5, 1887, DR. PRIOR contributes quite an exhaustive article on this drug, in which he states that sparteine regulates the pulse-rate, induces diuresis, and is free from cumulative action. He believes with Leo that it is neither a first-rate diuretic nor cardiac stimulant.

Last of all, we have the paper of DR. CLARKE in the current number of *The American Journal of the Medical Sciences*, in which he reaches the conclusion "that sparteine belongs to the digitalis group." According to this observer, we have in sparteine a remedy for cardiac hypertrophy, of an excessive type, combined with one possessing powerful properties as a cardiac stimulant where the heart is overtaxed, and also a remedy which resembles digitalis, yet increases the rapidity of the pulse. As is well known, cardiac hypertrophy contraindicates digitalis, and digitalis always slows the heart, except in cases of advanced poisoning, and it is, therefore, difficult to determine where the similarity of action exists.

Unfortunately, but little of the confused matter

before the profession can be unravelled, except by further careful research. The varying results of Voigt and Leo, and the doses used by each, certainly show that one of them did not use true sparteine, or else that his specimen of it was most impure. Some of the other discrepancies may be partly set straight by variations in the manner of administration, and like influences, but nevertheless an actual knowledge of the drug scarcely warrants its use unless as an experiment.

INTERMITTENT ALBUMINURIA.

DUBREUILH has contributed to the *Revue de Medicine* for August, a critical study of the subject, from which we learn that sex has an important influence on the etiology, as shown by the occurrence of the condition in forty-nine males out of the fifty-five cases. The majority of the cases were under twenty years of age; sixteen occurred between the ages of sixteen and twenty; only thirteen between the ages of twenty and thirty, and three cases above this age. Three instances are given of the affection in brothers.

The quantity of urine passed is usually normal, the specific gravity rather above the average, ranging from 1.020 to 1.030; the color not very deep, and the reaction acid. There is very commonly an excess of uric acid and oxalates. In typical cases the albumen is not abundant, not exceeding 15 grains to the quart. Heat and nitric acid have been the tests usually employed. In three cases globulin was found, and peptone has also been noted.

The most remarkable feature of this form of albuminuria is the periodicity, whence have been derived the names intermittent and cyclic. In a large proportion of the cases, the urine secreted at night, which is passed on rising, is free from albumen. Before noon, as a rule, the albumen appears, attains its maximum in the afternoon, and diminishes toward evening. In many cases food is quite without influence, in others it seems to play an important role. Exercise, cold, and emotions, particularly mental strain, appear as exciting causes in some of the records. The general condition of those affected may be excellent, and in many instances the discovery has been accidentally made, on the examination for life insurance or for one of the services. In other cases there are headache, lassitude, general feebleness, dyspepsia, and palpitation of the heart. The diagnosis is not difficult in typical cases, the periodicity, the frequent increase by exercise, or food, the absence of tube casts, and of cardio-vascular changes, are sufficient to exclude the various forms of nephritis. The chief difficulty arises in cases of interstitial nephritis, in which, as is well known, the albumen may vary very much, and the nocturnal urine may be almost, or completely, free. The age, and the occurrence of tube casts, and the circulatory changes will be the important guides.

We scarcely know enough about these cases to speak decidedly upon the question of prognosis. For years the health may remain good, but indicating, as the albumen certainly does, either a defective metabolism, or a feebleness of the renal tissue, such patients should exercise special care in food and drink. In some cases the condition has lasted for only a few months, in others for a period of years. No perfectly satisfactory mode of treatment has yet been found, but such tonics as iron and arsenic have proved beneficial in improving the general health, though the albumen may not have been influenced in the slightest degree.

CIRRHOSIS OF THE LIVER IN CHILDREN.

IN the current number of the *American Journal of the Medical Sciences* DR. PALMER HOWARD, of Montreal, presents an elaborate study of this rare condition, based upon two cases occurring in his practice and sixty-one instances recorded in the literature. From this somewhat extensive material we may gather information which throws light on the general etiology of cirrhosis.

Considering the causative relations of the cases analyzed, we find that in 10 the children were addicted to the use of spirits: in 7 there was a clear history of syphilis: in 7, perhaps 8, cases tuberculous disease coexisted: but in more than one half of the cases the etiology was obscure. It is possible, as Botkin originally suggested, that the infectious diseases may originate chronic inflammatory changes in the organs, in proof of which may be cited Klein's discovery of an acute interstitial hepatitis in 8 cases of scarlet fever; but in only 9, of the 38 cases which cannot be referred to any of the established causes, had acute infectious disease preceded, by a longer or shorter interval, the cirrhosis.

For the remaining cases Howard is inclined to favor Budd's suggestion, that the products of faulty digestion and certain stimulating kinds of food conveyed to the liver may excite interstitial hepatitis. Among such products the ptomaines may be important, and it is possible that they may be as irritating, or even more so than alcohol. Unquestionably in cirrhosis we must take into account the special constitution—the personal equation, so to speak—of the liver tissue. How resistant it may be to the injurious effects of alcohol, after years of exposure in some instances, how vulnerable in others! In certain children, a rich, stimulating diet may act injuriously, as alcohol, on an organ constitutionally prone to interstitial change. That such a tissue weakness may exist is suggested by the occasional

occurrence, as in Howard's cases, of the disease in members of the same family.

Of the character of the cirrhosis in the 50 non-syphilitic cases, in 19 the organ was atrophic, in 13 hypertrophied, in 6 of normal size, and in 16 this point was not mentioned. The symptoms are practically identical with those of cirrhosis in adults. Fever is by no means uncommon, but this occurs in ordinary cirrhosis more frequently than is generally supposed, or taught.

DIVERSE APPLICATIONS OF ANTIPYRIN IN THERAPEUTICS.

In The Medical News of May 28, 1887, we called attention to the results obtained by Germain Sée in the treatment of certain painful neuroses by antipyrin, his original observations being recorded in *L' Union Médicale* of April 26, 1887. Since that time Professor Sée has not been content with so limited a use of the drug, and in the same journal of September 10 and 13, 1887, we find records of the application of the remedy to a very large number of diseased conditions associated with pain. Among these we may mention both acute and chronic articular rheumatism and the acute paroxymal pains of gout, lumbago, sciatica, and the neuritis of ataxics.

In the second division of his paper, Sée records his use of this drug in painful conditions associated with disorders of the viscera, chiefly abdominal. Chief among these are renal and hepatic colic, colic of a gastro-intestinal type, and that associated with the uterus. Passing on, he speaks of its efficacy in the pain of angina pectoris, and of anæmic heart. Finally, he compares it with antifebrin, and gives no small amount of praise to the drug of which he writes. In the *Centralblatt für klinische Medicin*, No. 35, is a paper by Dr. Seifert, of Würzburg, on the same subject, in which he speaks of the value of antipyrin in hemicrania, angina pectoris, and chorea. This writer also speaks very favorably of the drug as used in these conditions. In view of the results so uniformly attained, by observers on the other side of the water, it is a little surprising that reports of its use by American practitioners should be so few and meagre.

Dr. Samuel G. Dixon has been elected Professor of Hygiene in the University of Pennsylvania, to succeed the late Prof. N. Archer Randolph.

Dr. St. John Roosa's *Treatise on the Ear* has been translated into German by Dr. Ludwig Weiss, and will be published early in the coming year by August Hirschwald, of Berlin.

Fourteen of the immigrants who arrived on the steamship "Alesia" a fortnight ago, have died of cholera at the hospital on Swinburne's Island, and there are still ten cases under treatment. The health authorities have had the vessel thoroughly fumigated, and she has been allowed to pass quarantine. Three of the cabin passengers were allowed to come up to New York last Monday.

SOCIETY PROCEEDINGS.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Eleventh Annual Meeting, held in Baltimore, August 31, and September 1 and 2, 1887.

Wednesday, August 31st.—Morning Session.

The Association was called to order by the President, Dr. H. G. Piffard, of New York.

Dr. R. W. Taylor, of New York, read a paper on

THE TOXIC EFFECTS OF IODOFORM.

He reported the details of 24 cases, 9 of which came under his personal observation. 16 of these cases were accompanied by constitutional disturbances while in 9 the rash existed alone without any apparent systemic symptoms. A large number of cases have been reported in which toxic constitutional effects have followed the use of iodoform. It is evident that the toxic effects of iodoform are more frequently manifested by systemic irritation than in cutaneous manifestations.

The skin affections may be classed under the general head of dermatitis, but for the sake of accuracy may be further subdivided according to their relative frequency, into erythema, eczema, and purpuric spots. The erythema due to iodoform may present many of the features of similar eruptions. Its mode of invasion is prompt and extension rapid. It may commence at the point where the application has been made, or other patches of erythema may begin in other parts and extend to meet that from the original point. Erythema may follow from simply smelling the iodoform. The eruption completes its evolution in a few days and under favorable circumstances this eruption rapidly undergoes involution, behaving very much as an ordinary exanthematous eruption. Various forms of erythema have been noted. Sometimes it is very superficial; in other cases it is still superficial but of a deep red hue, and may be termed scarlatiniform. In exceptional cases, usually those presenting grave constitutional symptoms, the erythema presents points of resemblance in hue and brawny feeling to erysipelas. Other cases may be placed under the head of erythema multiforme.

The eczema resulting from the use of iodoform is usually of severe form and rapid evolution, and may begin at the point of application or in parts at a distance. It may also result from simply smelling the drug. Its character is pronounced from the first. A large surface is involved and in all respects it is similar to ordinary eczema malidans. The involution is, as a rule, almost as rapid as the evolution, if the drug is removed. In some instances, however, the eruption shows a tendency to become chronic. It is usually amenable to treatment. Eczema occurred in 9 of the 25 cases reported.

The time of the appearance of the eruption was noted as follows; in 12 cases it began within a few hours or within the first day; 2 on the second day; 3 on the third day; 1 on the ninth day; 1 on the twelfth day; and 2 on the fourteenth day. This is in contrast with the statistics of the onset of the symptoms when systemic poisoning results. In the majority of these cases the morbid symptoms begin in the second week. As a rule, it may be stated that in proportion as the rash is slow in appearing, so are the concomitant symptoms severe. Statistics seem to show that the cutaneous manifestations are most frequent in youth and middle age, while the systemic symptoms occur most frequently in the aged. The erythema appearing upon the hands of dressers in hospitals as a result of the direct contact of the iodoform was regarded as being related to the ordinary hyperæmia induced by mustard and other irritating applications and not to be considered as belonging to the class of cases just described.

DR. J. NEVINS HYDE, of Chicago, had seen the eczematous form of eruption, and also erythema multiforme, and in one case there was a bullous type of eruption resulting from the use of iodoform. This occurred in a young man who had an operation performed for necrosis of the tibia. Iodoform was used in the dressing of the wound. The recovery was complicated with recurrences of erythema upon the surface of the body. This occurred in the form of large areas of a vivid bright color, afterward becoming dull. Scattered over these surfaces were large bullæ containing a clear, transparent fluid, and when ruptured produced superficial excoriated surfaces. The condition was finally traced to the iodoform application and within ten or twelve days after the discontinuance of the iodoform the eruption disappeared and did not recur.

DR. J. C. WHITE, of Boston, had seen a number of cases of eruptions due to the free use of iodoform in the treatment of surgical injuries. He had never seen systemic manifestations where there was dermatitis. The form of eruption has varied from simple hyperæmia up to the vesicular form and going no further in most cases. In occasional instances there appeared a furuncular form of inflammation owing possibly to mechanical obstruction of the cutaneous follicles by particles of the powder. The eruption is almost always found in the immediate vicinity of the point of application.

DR. I. E. ATKINSON, of Baltimore, then presented

A CLINICAL STUDY OF ERYSIPELAS IN CHILDREN.

He considered erysipelas to be a contagious, infectious disease. During the first month it is extremely fatal, but the mortality gradually diminishes up to the end of the first year. The fatality at this period is probably to be attributed to its dependence upon the poison of puerperal fever. He reported the detailed histories of three cases of erysipelas in young children. In two a cellular, board-like induration occurred as the result of intense œdema and cellular infiltration. In neither of these cases was there suppuration. He thought that erysipelas should be considered the expression of the effect of one of a number of specific causes, and in that sense should be regarded as a symptomatic inflammation.

DR. J. C. WHITE asked if the author personally knew of a case in which erysipelas was directly transferred from one person to another; and if he regarded the tincture of the chloride of iron as having any specific therapeutic action in the treatment of the disease.

DR. ATKINSON replied that he had not seen an instance of the direct contagiousness of erysipelas, but there are a number of well-authenticated cases on record. He could not say that the tincture of the chloride of iron was a specific, but in his experience it has had a more favorable influence on the course of the disease than any other remedy that he has employed.

DR. J. C. WHITE had never seen a case of facial erysipelas transferred from one individual to another. If at all contagious, it must be so with extreme rarity. He regards tincture of the chloride of iron, and all other internal remedies, as useless in the treatment of this form of erysipelas. For five years he has given no internal medicine in the treatment of erysipelas, and has not seen a case in which the erysipelatous eruption did not disappear in from five to ten days. In his experience, infantile erysipelas has been so wholly different in its clinical aspects and course, with or without treatment, from ordinary traumatic erysipelas, that it seems to be quite a distinct disease.

DR. HYDE had seen one case which seemed to indicate the contagious nature of erysipelas. A young mother, soon after confinement, had her ears pierced for ear-rings. This was shortly followed by typical erysipelas, spreading over the face and scalp. Soon the nursing child was affected with the disease, and presented typical erysipelas, from which it died. He agreed with Dr. White, that tincture of the chloride of iron is useless in the treatment of this affection.

DR. ATKINSON said that in those cases of erysipelas which may be termed septic, whether the disease depends upon ordinary septic poison or not, he had no doubt that benefit is derived from the administration of the tincture of the chloride of iron in large doses, as much as half a drachm, three or four times a day.

DR. R. B. MORISON, of Baltimore, then read a paper on

LEUCOPATHIA UNGUICUM, A PECULIAR AFFECTION OF THE NAILS.

The ordinary white spots found upon the nails are well known. These are gradually forced to the outer edge of the nail by the growth of new nail behind. The time occupied in this process varies from four to six months. These spots are usually irregular in shape. A lady, twenty years of age, recently came under the author's observation, in whom these spots presented a uniform appearance. Examination of the nails showed white bands one-sixteenth of an inch in width, extending across the nail, from border to border. The nails were perfectly smooth, and in other respects normal. The general health was good, and there had been no acute disease. These white bands across the nail had been regularly appearing for many months. During the previous summer the lines had disappeared almost entirely, the toenails were not affected and the hair was not gray. Portions of the nails were subjected to microscopical examination. Sections were made, cutting the white lines at right angles. By direct light these lines appeared of a pure white, while the rest of the section was of dark color. The application of acetic acid and

other agents caused a gradual disappearance of the lines. Canada balsam also caused their rapid disappearance. It, therefore, seemed plain that these white lines were due to air spaces in the nail; the disappearance being caused in the one case by the swelling of the adjacent cells, induced by the acetic acid, and in the other, by the filling of the spaces with Canada balsam. Examination of several white spots gave similar results.

Dr. Hyde then reported

THREE CASES OF SIMULTANEOUS HAND AND FOOT DISEASE.

(See page 416.)

Dr. L. A. Duhring, of Philadelphia, has regarded the affection as dependent upon a want of nutrition in the nail tissues, and had employed arsenic with satisfactory results. This acts upon the nervous system, improving the nutrition of the whole member, and of the finger-nail in particular.

Dr. P. G. Unna, of Hamburg, said that the presence of air in the horny tissues is always a secondary phenomenon. The horny masses must be changed before they will allow the entrance of air. These white spots in the nails are analogous to medullary substances.

He had seen cases similar to those described by Dr. Hyde, and had allied them with eczema. His principal reason for so doing was that in some cases he had seen combined with the disease of the hands patches of eczema on various portions of the body.

Dr. R. W. Taylor, of New York, regarded Dr. Hyde's cases as cases of tylosis of the hands and feet.

Dr. Le Grand N. Denslow, of St. Paul, regarded the cases as instances of callosities. In his last case, in the person of a hotel porter who was unable to perform his duties on account of the tender condition of the soles of the feet, he first removed the callosities by the application of a saturated solution of salicylic acid in collodion, and then made a false sole for the feet by the application of belladonna plaster spread upon kid. By this means he is able to attend to his work in comfort.

Dr. E. Wigglesworth, of Boston, had now under treatment a case similar to those described by Dr. Hyde. He regarded it as a case of tylosis. In the treatment he employed a 20 per cent. solution of salicylic acid in emplastrum saponis until the callosities were removed. He then dressed the parts with equal parts of belladonna and mercurial plaster spread on kid. Regarding the condition as dependent upon lowered nutrition, he also employed tonics with good effect.

Dr. Hyde, of Chicago, stated that he had at first regarded these cases as instances of tylosis, but a large experience showed that this view was not correct. In one case he had watched the course of the disease for three years. The parts have been macerated for days and weeks at a time. He knew that there is a constant new formation of these masses, and that the nails are continually undergoing a similar process. These cases are entirely different from the ordinary forms of tylosis and callosities.

Afternoon Session.

Dr. L. D. Bulkley, of New York, presented some

CLINICAL NOTES ON PRURITUS.

Pruritus may be defined as a functional disturbance of the nerve elements of the skin, resulting in itching not dependent upon local irritation or local lesion. Out of a total of 5000 cases of general skin diseases he had records of 80 cases of pruritus, a proportion of about 1.75 per cent. Thirty of the patients were females and fifty males. In the majority of cases there was some chronic disease, such as gout, albuminuria, and chronic bronchitis, or marked evidence of lowered general vitality. Temporary benefit was obtained in some cases while in others no relief resulted from treatment. The author was of the opinion that in many cases the condition resulted from reflex irritation. In 115 observations which he had made in all but three the reflex occurred on the same side as the point of irritation.

Dr. F. B. Greenough, of Boston, presented some

CLINICAL NOTES ON PEDICULOSIS.

He had been induced to examine this subject on account of the fact that the statistics of the Association had shown that there was a greater proportion of cases of pediculosis reported from Boston than from any other city. The only explanation of this fact that can be offered is that the difference is more in observers than in the number of cases of the affection. An observer in one city may put under the head of eczema capitis, a case which would be considered in Boston as one of pediculosis capitis.

Dr. J. C. White, of Boston, said that in the treatment of pediculosis of the pubic region and of the head he always used crude petroleum. This does not produce the slightest irritation upon the most inflamed surface. It is allowed to remain in contact with the hair for two or three hours.

D. J. C. White then read

AN INTRODUCTION TO THE STUDY OF THE INFLUENCE OF DIET IN THE PRODUCTION AND TREATMENT OF SKIN DISEASES.

Many articles of diet are considered, both by the people and by the profession, as injurious in certain affections of the skin. He held that in regard to many of these articles there was no evidence of their injurious effects, with the exception of popular belief, and that they should not be discarded until more proof was advanced against them. Among various substances considered injurious in skin diseases, butter was mentioned, but he regarded pure, uncooked butter as entirely harmless so far as the skin is concerned. Oatmeal and buckwheat have been classed in the same category, but there was no foundation for such a belief. The same remarks apply to fish and meat, which have been regarded as harmful by some dermatologists. He then mentioned certain articles which in his experience had seemed to be prejudicial in certain skin affections. Alcohol aggravates the course of inflammatory conditions of the skin. In some lager beer will produce a crop of acne over the lower part of the face. The eating of acid fruits may cause an acute eczema. Strawberries often cause urticaria. Apples are said to produce an acneform efflorescence about the mouth. Some nuts, especially the English walnut, may produce inflammation of the mucous lining of the mouth. Shellfish and crustaceans may occasionally give rise to urticaria. Other meats may at times produce similar effects. The worst case of giant urticaria that he had seen had followed the use of roast turkey.

Dr. Hyde agreed with the speaker in regard to most of the articles mentioned. He should, however, put oatmeal on the black list. Where urticaria follows the use of the grape, he thinks that it is principally due to the fact that the seeds and skin of the grape are also swallowed.

Dr. P. G. Unna, of Hamburg, had seen urticaria produced by strawberries in cases where the berry had not been swallowed but simply placed in the mouth.

Dr. Bulkley had more than one patient who cannot take raspberries without having urticaria. In some cases pineapples have a similar effect. He had seen many patients in whom injurious effects have followed the use of milk with the meals. If taken between meals it produces no injury. He had found that nearly almost every case of acne is aggravated by soup taken with the food.

Thursday, September 1st.—Morning Session.

At the business meeting the following were elected

OFFICERS FOR THE ENSUING YEAR:

President.—Dr. I. E. Atkinson, of Baltimore.

Vice-President.—Dr. P. A. Morrow, of New York.

Secretary and Treasurer.—Dr. G. H. Tilden, of Boston.

The report of the Committee on the

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

was received and adopted. Dr. I. E. Atkinson, of Baltimore, was appointed representative to the Executive Committee of the Congress, and Dr. G. H. Tilden alternate.

Dr. L. A. Duhring, of Philadelphia, read a paper on

THE DIAGNOSIS OF DERMATITIS HERPETIFORMIS.

He had been led to believe, from the perusal of various reports of cases, that this affection was not thoroughly understood. Its chief characteristic is the multiformity of the lesions manifested in the natural evolution of the disease. Blebs, vesicles, and pustules, may appear together or separately. Mixed eruptions are the most common, vesicles predominating. In one attack or another only one kind of lesions may be present. The disease presents clearly defined characters in distinct elementary lesions, and certain distinctive abortive lesions. Secondary forms of lesions also exist. Pigmentation of a dirty yellow or brownish hue, and variegated, is usually a marked feature in chronic cases. In no other affection are such varied combinations of lesions met with as in dermatitis herpetiformis. Erythema and vesicles, or vesicles and blebs, or blebs and pustules, frequently exist side by side in close proximity with more or less pigmentation, excoriation, and secondary changes. Itching is usually a most distressing symptom, and is most severe in the vesicular variety. In the purulent form, subjective symptoms may be wanting. The disease is extremely chronic, extending over a number of years. In two cases, under the author's observation, the duration had been thirteen and eleven years respectively, and the disease was still active with no prospect of cure.

Some cases of dermatitis herpetiformis closely resemble cases of erythema multiforme, but the lesions of the former disease are less sharply defined, and the course of the two affections is different, erythema multiforme being an acute disease of short duration. The disease occasionally resembles herpes iris, but the chronicity of the affection would exclude herpes iris. The lesions are also more virulent and accompanied with a more profound degree of cutaneous disturbance. Herpes iris is a benign affection, running an acute course, and terminating in recovery, although subject to relapses. When the bullous varieties exist alone they may resemble pemphigus vulgaris, the combination with other lesions will, however, prevent any confusion in the diagnosis.

Dr. P. G. Unna, of Hamburg, read a paper on

THE TREATMENT OF LEPROSY.

After referring to the fact that leprosy was usually considered incurable, and that as a consequence treatment was not resorted to, he stated that he had recently treated five cases of this affection with encouraging results. The treatment consists in the external use of the following ointment:

Chrysarobin	5 parts.
Ichthyol	5 "
Salicylic acid	2 "
Vaseline	100 "

This is applied to the nodules on all parts of the body with the exception of those on the face, neck, and hands. In the latter situations pyrogallic acid is substituted for the chrysarobin in the above formula. Such an application may be continued for months. For some of the older nodules this is not sufficiently strong; for these the author employs salicylic acid or salicylic acid and chrysarobin in the form of a plaster on muslin. This is allowed to remain two or three days or a week. Under this application the tubercle drops out.

In the five cases treated by this method there has been a rapid disappearance of the leprous matter in the skin. There also was in these cases a decided improvement in the general condition, although no internal remedies were given, the object being to test the efficacy of the external applications.

Dr. P. A. Morrow, of New York, had recently had the opportunity of treating a number of cases of leprosy, and he believed that certain cases of leprosy are as responsive to chaulmoogra oil as are cases of syphilis to mercury. In the case of a Norwegian, the subject of tubercular leprosy, the lesions had disappeared, and he had apparently recovered under the use of chaulmoogra oil. On a number of the nodules of the face he used caustic potash, and they disappeared very rapidly. Some cases, however, fail entirely to respond to this treatment.

Dr. Piffard some time ago treated a case of leprosy in a young man from Bermuda. When he entered the hospital he was unable even to dress himself. He was given a preparation containing strychnia, and in six weeks was engaged in rowing the boat across the river. He also used nux vomica in as full doses as the patient would tolerate. He was in the habit of associating this with the external use of chaulmoogra oil.

Afternoon Session.

Dr. H. W. Stelwagon, of Philadelphia, read a paper on

THE USE OF MEDICATED RUBBER PLASTERS IN CERTAIN CUTANEOUS DISEASES.

(See page 421.)

Dr. Unna said that in the plasters which he employed the plastic mass was spread upon muslin much more flexible than that on which the rubber plaster is spread. The adhesive material which he employed had been either the oleate of aluminium, or the best India-rubber. As little of the adhesive material as possible was employed, not more than two to five grammes to the square metre. The strength of the plaster is reckoned, not by percentages, but as so many grammes of the active agent to the metre.

Dr. H. G. Piffard, then read a paper on

SALT IN DERMAL HYGIENE AND THERAPEUTICS.

In vigorous individuals psoriasis and chronic eczema will often be benefited by a short sea-bath, followed by rubbing. If the patient be feeble, or the bath prolonged, the result will be unfavorable. Prickly heat, pruritic affections, and furuncles, are often benefited by sea-bathing.

In acute eczema the use of ordinary water is, as a rule, followed by temporary aggravation of the trouble. In these cases a full bath of 5 per cent. to 1 per cent. salt solution had been used with great comfort to the patient. In subacute eczema, psoriasis, furuncles, in irritable summer rashes, whether papular or pustular, and in ulcerating syphilides, a 5 per cent. solution of salt may be used with great advantage. The salt-water bath should be used as hot as can be borne, continued fifteen to twenty minutes, and should be taken just before retiring. Genuine sea salt is not so good for the bath as coarse white salt, on account of the slimy feeling which is left. The therapeutic effects are identical.

Adjourned.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Special Meeting, September 19, 1887.

The President, J. Solis-Cohen, M.D., in the Chair.

Mr. Lennox Browne, F.R.C.S., of London, read a paper on

AN UNRECOGNIZED CAUSE OF SOME THROAT AILMENTS.

In accepting the very flattering invitation of your President to speak a few words to the members of the Philadelphia County Medical Society, it appeared to me both more becoming and more profitable to offer you some practical remarks explaining the *rationale* of some of the commoner of throat ailments, than to attempt to magnify the office of the laryngoscope by the relation of rare and wonderful cases. I was the more inclined to this view because I was well aware that, through the assiduous industry and well-known skill of your President and other members of your Society, you have for some years been kept thoroughly posted in all that is new in laryngology.

It is now some ten years since first I sought an objective explanation of the condition known as *globus hystericus*, and since I commenced to make a systematic examination with the laryngoscope of every patient who came to me with this symptom. The result was communicated in a paper to the Congress of Laryngologists held at Milan in 1880. I found that but very few cases indeed are of a hysterical character—that is, of the nature of a phantom sensation—though uterine or ovarian disorder is a not infrequent predisponent, or, at least, concomitant of the throat condition in the female sex.

Extending the term *globus hystericus*, I find that, with hardly an exception, all and every other subjective sensation in the throat is symptomatic of an objective cause. The chief of such feelings are those of a heat, a prickling, a swelling, a weight, a straw, a hair, or other foreign body. A few patients—one especially, a hale farmer—have complained of a feeling of intense cold, which is sometimes relieved, sometimes aggravated, after food-taking. In some instances there is actual pain with spasm, cramp, and a sensation of choking, and not infrequently there is cough; this symptom varies in degree from a slight hacking, to the loud hyena like bark known as nervous laryngeal cough. Many of the cases of so-called laryngeal vertigo, or, as I prefer to call it, of laryngeal epileptiform seizures, are capable of explanation and cure, on the lines I am at present taking.

On examination of the throat of a patient with symptoms such as I have described, one may or may not see chronic congestion and relaxation of the fauces and uvula, enlargement of the tonsils or obstruction by caseated material of the orifices of the crypts, granular pharyngitis, or even laryngeal hyperæmia. Where any one of these conditions is present, treatment thereof may or may not give relief; but none of them represents the class to which I would draw your attention, namely, that in which there is no generally recognized morbid state of local significance.

The results of laryngoscopic investigations in my hands have shown that there is:

1. A varicose, and even truly hemorrhoidal, condition of the veins at the base of the dorsum of the tongue, sometimes at the under surface and sides, in which last case it may be symptomatic of mitral insufficiency, or of severe hepatic derangement, or even of cerebral lesion. There is often a similar varicose state of the vessels in the superior surface of the epiglottis.

2. An enlargement of the circumvallate papillæ at the back of the tongue, causing the epiglottis to be hindered in its movements—imprisoned, as your President first called it.

Just drawing attention to the fact that the structure of these glands is very similar to that of the tonsils, I may mention that in a few instances I have seen actual blocking of the orifices, similar to the condition known generally as chronic follicular tonsillitis.

I may also note that it is not possible to see these things either with a tongue depressor or in the laryngeal mirror as ordinarily employed. Many observers, especially beginners, seem to consider that their sole aim is to see the vocal cords, and, if these are sound, they write down, "larynx normal;" but they omit to look well to the frame-work. To see this condition of lingual varix and glandular hypertrophy, the mirror must be placed high up in the throat.

Where, as is often the case, there is no actual or noticeable enlargement of the thyroid gland, it will be observed, in passing the hand gently over the front of the throat, that there is a distinct fulness of the thyroid isthmus. If the least pressure be made at this situation, the patient—not necessarily a female—will complain that the abnormal sensation is at once excited, and, on

being questioned, will admit that when it occurs the collar is felt to be too tight for the neck.

Inquiring into the general health, and happily failing to find any of the more serious lesions to which I have alluded, it will be noted that habitual constipation and a generally defective circulation are both frequent symptoms, while in others there will be concomitant evidences of a varicose diathesis, as rectal hemorrhoids, varicocele, or varicose veins of the extremities.

In females the menstrual flow is often morbidly frequent or excessive, and there are other evidences of an enfeebled vasomotor control. Abuse of alcohol and tobacco are excitants of the condition; and in the cases or public speakers, defective methods of filling the lungs —forcing the lower registers upward, or other functional fault which may lead to undue strain on the palato-pharyngeal muscles and engorgement of the vessels in this region—are fruitful predisponents.

In this connection, I may refer to the accurate explanation offered by your fellow-citizen, Dr. Carl Seiler, of the etiology and pathology of chronic pharyngitis when occurring to voice users.

Some of those obscure cases which come under our occasional notice, of the presence of small quantities of blood in the mouth, or of the taste thereof on rising from sleep, will be explained by the leakage of one or other of these enlarged and hemorrhoidal venous capillaries in the region now under consideration.

A few words as to treatment. If the case is not of long standing or of aggravated character, correction of the main constitutional cause—cessation of the faulty method of voice production, or prohibition of a vicious habit or indulgence—may be sufficient to effect a cure, but this is rarely the case. Of remedies, I give chalybeates and aperients with digitalis or ergot, as may be indicated. Locally, astringent applications, especially of chloride of zinc or perchloride of iron, are by no means without avail; they can be applied by the patient himself. Gargles as ordinarily employed are useless, and occasionally are productive of exacerbation of the symptoms. Not so if employed by the method known as that of Von Troeltsch. Of lozenges, I find those of muriate of ammonia much more active in leading to resolution of the venous congestion, than those of red gum, rhatany, etc.

Recent investigations show that the astringent properties of tannin have been exaggerated. Where the uvula is relaxed, the snipping of an elongated portion, especially if other functional or constitutional faults are corrected, may lead to a cure; but in a certain proportion of patients in which the promises of the specialists as to the good effects to be gained by the procedure are not realized, the cause of failure will be found in non-recognition of the varicose vessels. Treatment of these is best effected by the galvanocautery point, and it is necessary to seal each individual enlarged vessel. For this purpose it may be necessary to make more than one application. Lastly, there is often a hyperæmic tumefaction of the vessels, glandules, and submucous tissues of the pharynx, naso-pharynx, and turbinated bodies; these will also be best treated by galvanocautery.

In conclusion, I would say that if it be objected that the conditions I have described are but representative of an advanced chronic congestion, I do not deny that such occasionally may be the case. In the majority, however, there are no such antecedents; and where the two exist, the practitioner will fail to cure his pharyngitis, or what not, until he has recognized and treated the varix.

And it is in this light that I have ventured to call attention to the subject as one that is not generally recognized, for beyond a short communication made at Milan at the same time as my own, by my deceased colleague, Llewelyn Thomas, I have seen no allusion to it in any text-books or archives, and no notice is taken of it by the great teachers of Vienna. I therefore make no apology for having occupied your time with considerations that may, on first hearing, appear trivial, or of exaggerated importance.

DR. CARL SEILER quite agreed with the speaker, that the *globus hystericus* is rarely of purely imaginary origin. Some chronic inflammation of the upper air passages usually accompanies this distressing condition. As he truly says, pharyngitis is one of the most common causes of this symptom. At the same time the pharyngitis is to his mind, as a rule, the consequence of remote causes which may be looked for in one of three different directions—in a disturbance of the gastric system, in a disturbance of the respiratory function of the nose and naso-pharynx, and finally, and most commonly in public speakers and singers, in a faulty use of the organ of voice. The latter condition is frequently met with in those who simply use the voice for ordinary conversation. The constant irritation thus produced leads to hyperæmia and chronic inflammation, which extends upward, rather than downward, into the trachea. In the treatment of the condition described, he thinks that little can be accomplished by the application of remedies to the apparent seat of the disease, but that the cause must be looked for and removed.

CORRESPONDENCE.

A GOOD BANDAGE.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of September 24th, under the head of "Flannel *versus* Rubber Bandages," you speak of the various forms of material used for bandaging purposes. My object is to call your attention, and that of the profession, to an article made of cotton, and woven in tubular form in the manner of hose, which combines the permeability of flannel, without the great disadvantage of shrinkage upon washing, also the roughness preventing slipping, greater elasticity than flannel—yet less than rubber—and not least, at much less cost than either.

This material, made at the suggestion of Dr. Stelzner, of Dresden, by H. Müller of that city, in widths varying from 2 to 22 inches, is largely used by him, by Nussbaum and others, in all dressing requiring elastic support and pressure. Not its least advantage is its ready and easy application in the hands of the class usually with varicose ulcers, etc.

There exists, in my opinion, no better material, and a variety of uses suggest themselves. Moderately filled with plaster, it makes a most excellent splint. For encircling the thorax, where the extreme rigidity of mus-

lin is objectionable, it appears to me to be the very best afflicted material.

The inclosed specimen will, I trust, speak more eloquently of its good qualities than any note.

Yours, respectfully,

O. Czarnowski.

New Orleans, September 28, 1887.

[The sample inclosed we find has all the merits claimed for it, and in practice should prove excellent. —Ed.]

NEWS ITEMS.

A Congress at Amsterdam.—There will be a Congress for Natural Science and Medicine, at Amsterdam, on September 30th, and October 18th. Professor Donders will be President of the Section on Medicine.

Sanitary Police in Italy.—A corps of sanitary police has just been created by the Italian government, and Dr. Pagliani, Professor of Hygiene in the Turin University, has been placed at its head.—*Sanitary News*, September 10, 1887.

The Cremation of Infectious Bodies.—It is now an imperial regulation in Brazil, that persons who die from yellow fever shall be cremated, the State bearing the whole expense. This decree might be extended judiciously to all contagious diseases.—*Sanitary News*, September 10, 1887.

Theatre Physicians.—The ordinance recently put in force in Paris for the regulation of theatres, provides that each theatre must have a corps of physicians proportionate to the size of the theatre, one of whom must be constantly in attendance during the performances. In the physician's office must be placed an ambulance call.

The Avoidance of Overpressure in Schools.—The Committee of the French Academy of Medicine reported as follows on this question: "The Academy of Medicine calls the attention of the public authorities to the necessity of modifying, in conformity with the laws of hygiene and the necessities of the physical development of children and young people, the present arrangements of our scholastic establishments. It thinks that the colleges and lycées for boarders should be removed to the country; that wide, open spaces should be set apart for games; and that the class-rooms should be improved as regards lighting and ventilation. Without dealing with the course of study—which it desires to see simplified—the Academy calls special attention to the following points: Increase of the time for sleep, as regards young children; for all the pupils a diminution of the time devoted to study and classes—that is to say, to sedentary occupations—and a proportional increase of the time for amusement and exercise; the absolute necessity of submitting all the pupils to daily exercise in physical training, proportioned to their age—namely, walking, running, jumping, formations, evolutions, regulated and prescribed movements, gymnastics with apparatus, fencing of every kind, games of strength, etc." —*British Medical Journal*, August 13, 1887.

Professional Secrets.—A Belgian physician has been several times condemned by the courts for refusing to give the name of the mother of a child whom he delivered. The Minister of Justice, in reviewing the case, holds that no legal power exists which can oblige the physician to betray a patient's confidence.

Antisepsis in Duels.—In a recent duel between French journalists, the seconds had taken the precaution to dip the swords of the combatants in carbolized solution; as the result, their wounds healed without suppuration, and they were about in a few days after their encounter. *Le Progrès Médical* suggests that in duels with pistols, bullets which had been sterilized by immersion in proper liquids, or treated at proper temperatures, be employed. We suggest that germs previously agreed upon by the combatants be selected in place of bullets and swords, and that duels by inoculation be instituted as a refinement characteristic of Nineteenth Century medicine.

A Medical Journal in Manitoba.—The *Manitoba Lancet* will represent medical journalism in this advance post of the profession.

Amputation of the Cervix Uteri during Hypnotic Sleep.—In July last, Dr. Pio Masetti, at the hospital of San-Giacomo, at Rome, amputated the cervix uteri while the patient was hypnotized. The experiment was completely successful. No evidence of pain was given by the patient.

Swill Milk.—*Science*, of September 30, 1887, closes its inquiries regarding the use of swill milk as follows: There appears to be some difference of opinion as to the exact chemical composition of distillery swill, under different circumstances; so that in carrying out any experiments the following points, as suggested by Professor Law, should be ascertained and recorded: (1) Is the swill fresh? (2) Has it undergone any other than the alcoholic fermentation? (3) Is it uniform in quality as supplied from day to day? (4) At what heat is it fed? (5) Does it contain the simple original grain-products—gluten, salts, etc.—or has there been added any chemical agent used in the manufacture of the alcoholic liquid? These inquiries are necessary, because the effect of swill when fresh may be entirely different from swill in an acid or decomposed state, and the allegation has also been made that injurious chemical agents are added. The temperature of the stables in which the experimental animals are housed should also be recorded. In short, every condition which is liable to enter as a factor into the problem should be intelligently regarded. Dr. Salmon advises that biological analyses of the milk should be made, in order to determine the relative number of germs as compared with milk from country pastures.

Hitherto chemical analysis has been mainly relied on in determining the quality of the milk; but, as Dr. Sturtevant remarks, "while this is of assistance, it cannot alone determine the questions relative to healthfulness. The question should be investigated from the chemico-physiological standpoint: determine whether substances not met with in ordinary foods can be traced through the animal to the milk; whether bacterial

germs exist in the food, and whether such can be traced through the animal to the milk; whether animals of a delicate nature will succumb, or show indication of disease, when fed with suspected milk, while other individuals thrive upon a milk considered of a fine quality. The development of ptomaines in feeding substances through neglect of proper precaution should also receive investigation, as a food otherwise useful may at times become dangerous on the neglect of ordinary precaution.".

Dr. Salmon does not regard the studying of milk from healthy cattle, fed upon swill under favorable hygienic conditions, as of much value toward elucidating the practical questions involved. "The question," he says, "is not, whether a small quantity of cool and fresh swill fed with a suitably prepared ration of other articles of food to healthy cows, having clean roomy stables, and plenty of exercise, is injurious to the milk, but it is this: Is wholesome milk produced by feeding swill under the conditions in which it is fed in practice, and must be fed in order to make it a profitable industry?" And finally, as Professor Rohé so well expresses it, "a scientific solution of the question will not be furthered by prejudiced appeals or unreasoning denunciation. Patient investigation, keeping in view all circumstances of the question, and avoiding all one-sidedness in considering the matter, will alone bring about the object desired."

With these suggestions to those having in charge the experiment stations, we leave the subject with our readers. We shall be glad to record any observations or experiences which any one may send us in the future; so that, even if public interest cannot be sufficiently aroused to bring about a proper investigation of the subject at the present time, it may, by a reminder from time to time, be kept alive until the demand for such an inquiry becomes irresistible.

THE PROHIBITION OF POISONOUS COLORING MATERIALS.—Sweden has also passed laws against the use of poisonous coloring materials in goods for household use, such as woven fabrics, yarn, shades, sealing wax and wafers, wall paper, artificial flowers, blinds, etc.—*American Analyst.*

MR. RICHARD QUAIN.—This well known physician and writer on medical subjects, died at London, September 15, 1887, aged eighty-seven. He was one of the founders of the Pathological Society, President of University College, and a Fellow of the College of Surgeons. In addition to many contributions to medical journals, he published in 1844, Quain's *Anatomy of the Arteries of the Human Body*, a standard work in the English language. He was one of the first to draw attention to the pathology of fatty degeneration of the heart.

IN MEMORY OF DR. JOSEPH C. HUTCHISON.—At a meeting of the Medical Staff of the Brooklyn Hospital, September 24, 1887, the following minute was adopted:

The long and active connection of our friend and associate, the late Dr. Joseph C. Hutchison, with the Brooklyn Hospital, was characterized by earnest and unfaltering devotion to its interests. His preëminent professional skill, his large and varied experience, his conservative and accurate judgment, his genial manner and the inspiration of his native kindnesss and Christian manhood, were ever ready for his professional associates as well as for those who sought the shelter of this institution for help; and were ever intent on all suggestions that served to keep the Brooklyn Hospital first and most liberal among the charitable institutions of the city.

Contributing as he did by his dignified presence and his many graceful accomplishments to the adornment and advantage of the enterprise, culture, and benevolence of the city, the Brooklyn Hospital was nearer to his heart than any other, and to it we re given his utmost care and the best of his gifts.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM SEPTEMBER 27 TO OCTOBER 3, 1887.

SMITH, A. K., *Lieutenant Colonel and Surgeon.* Granted leave of absence for one month and fourteen days, to take effect upon his being relieved from duty at the U. S. Military Academy. —*S. O. 223, A. G. O.*, September 24, 1887.

DIETZ, W. D., *First Lieutenant and Assistant Surgeon.*—Leave of absence extended one month.—*S. O. 223, A. G. O.*, September 24, 1887.

KNUDLER, WILLIAM L., *First Lieutenant and Assistant Surgeon.*—Ordered to accompany Light Battery "F," Fourth Artillery, from Fort Snelling, Minnesota, to the International Military Encampment, at Chicago, Illinois.—*S. O. 97, Department of Dakota*, September 20, 1887.

CABELL, J. M., *First Lieutenant and Assistant Surgeon.*—Relieved from further duty in connection with the competition of the "Team of Distinguished Marksmen," at Bellevue Rifle Range, to take effect October 1, and will return to his station, Fort Omaha, Nebraska.—*S. O. 95, Department of the Platte*, September 27, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 1, 1887.

MEANS, V. C. B., *Assistant Surgeon.*—Ordered for examination preliminary to promotion.

DERR, E. Z., *Passed Assistant Surgeon.*—Detached from the Navy Yard, New York, and ordered to the "Alpine."

ASHBRIDGE, RICHARD, *Passed Assistant Surgeon.*—Detached from the Naval Academy, Annapolis, Maryland, and wait orders.

RUSSELL, A. H., *Passed Assistant Surgeon.*—Ordered to the Naval Academy, Annapolis, Maryland.

HERNDON, C. G., *Passed Assistant Surgeon.*—Detached from the Naval Dispensary, at Washington, D. C., and ordered to the "Enterprise."

ARTHUR, GEORGE, *Passed Assistant Surgeon.*—Detached from the Museum of Hygiene, Washington, D. C., and ordered to the Naval Dispensary.

GRIFFITHS, S. H., *Passed Assistant Surgeon.*—Ordered to the Museum of Hygiene, Washington, D. C.

SPEAR, J. C., *Medical Inspector.*—Leave of absence granted until July 1, 1888, with permission to leave the United States.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

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ORIGINAL LECTURES.

ON THE GENERAL ETIOLOGY AND SYMPTOMS OF CHOREA.

BASED ON THE RECORDS OF 410 CASES AT THE INFIRMARY FOR NERVOUS DISEASES, PHILADELPHIA.

Two lectures delivered at the Infirmary during the Summer Session.

BY WILLIAM OSLER, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

LECTURE I.

GENERAL ETIOLOGY.

ALREADY from this hospital a large number of important contributions to the clinical history of chorea have been made. These are embodied in Mitchell's *Lectures on Diseases of the Nervous System*, in Sinkler's article on "Chorea" in Pepper's *System of Medicine*, and in numerous papers by Mitchell, Sinkler, Gerhard, Allison, and Morris J. Lewis.[1] By the kindness of my colleagues I am enabled to utilize the rich clinical material which has accumulated since 1876, and these lectures represent our combined experience.

Historical Note.—The recognition of chorea as a distinct disease dates from Sydenham, whose *Schedula monitoria* (1686) and *Processus Integri* (1699) contain brief but very accurate accounts of the affection as we now know it. During the fourteenth, fifteenth, and sixteenth centuries, under the influence of religious excitement, there were epidemics of dancing mania, particularly in the Rhenish provinces. Pilgrimages were made to various shrines in search of relief, and as that of St. Vitus, in Zabern, was specially famous the dance became known by his name. Elsewhere it received other names, as St. John's or St. Anthony's dance. The epidemics gradually died out, but curiously enough, as Charcot states,[2] an annual pilgrimage of dancers, in perpetuation of the custom, is still made to the church of St. Willibrod, in Luxembourg; and Hirsch[3] refers to a "procession of the jumping saints" which is still commemorated at Echternach. It is interesting to note that in Kentucky and Tennessee, in the early part of the century, during periods of intense religious enthusiasm, there were epidemic convulsions, similar in some respects to the dancing mania of the middle ages. In 1805, Dr. Felix Robertson described them in an "Essay on Chorea Sancti Viti," in his doctorate thesis at the University of Pennsylvania.[1] It was unfortunate, to say the least, that Sydenham should have given the name chorea to an affection which had nothing whatever to do with the Chorea Sancti Viti of the older writers. However, there need not now be any confusion, as custom has sanctioned the use; and this is not the only instance in medicine in which we know a disease by a name the original signification of which has long been lost. The affection which Sydenham described is known as chorea minor, in contradistinction to chorea major, a term which has been applied both to the dancing mania and to the graver form of the ordinary disease. Commonly, however, we employ the term chorea, or St. Vitus's dance, alone to designate the disease of children, and use qualifying terms when we refer to varieties or symptomatic forms.

It would be ungrateful in a historical note, however brief, not to mention certain of the authors to whom the profession is specially indebted. From the monographs of Bouteille (1810), in France, and Bernt (1810), in Germany, we may date the modern study of the disease. In the former country Trousseau, Roger, and Sée, whose essay (1850) has served as a model for many succeeding workers; in the latter country, Romberg, Steiner, and Ziemssen. In Great Britain, the Guy's Hospital physicians Bright, Babington, Addison, Hughes, Wilks, and Pye-Smith, have made special contributions, while Todd, Begbie (Sr.), Kirkes, Ogle, Hughlings-Jackson, Broadbent, Dickenson, Hillier, Tuckwell, Bastian, Sturges, Gowers, and more recently Money, Horsley, and Stephen Mackenzie, have striven to place the disease on a firm anatomical and clinical basis. In this country, in addition to the works already mentioned from this hospital, there have been many reports of cases and careful studies of the disease by Levick, Wood, Mills, Jacobi, Hammond, Hamilton, Haven, Hutchinson, Huntington, and Putnam.

Definition.—Chorea is not only burdened with old associations, but recent studies have so widened our knowledge of choreiform symptoms that it is somewhat difficult to define the precise limitations of the disease. Indeed, there are those who would deny its existence as a separate entity, and claim that it is merely a symptom, not a disease. In our present knowledge the following is a convenient classification based on that adopted by Charcot.

1. *Chorea*, a primary and independent disease of unknown causation, affecting children, more rarely adults, and characterized by involuntary and irregular contractions of the muscles, and a variable amount of psychical disturbance. Certain forms occur under special conditions, as chorea gravidarum, senile chorea, habit chorea, chronic chorea, and the hereditary form; but it is quite probable that subsequent investigations

[1] Among these may be mentioned Gerhard: Report on thirty case of chorea, Phila. Med. Times, 1874; Report on eighty cases of chorea, Amer. Journ. Med. Sciences, 1876. Sinkler: Chorea in the aged, Journal of Nervous and Mental Diseases, vol. viii. 1881; Chorea in the negro, THE MEDICAL NEWS, 1882. Alison, Amer. Journ. Med. Sciences, 1877. Morris J. Lewis: THE MEDICAL NEWS, 1886.

[2] Les Demoniaques dans l'Art, 1887.

[3] Geographical Pathology, vol. iii.

[1] See, also, David Yandell on Epidemic Convulsions, Brain, vol. iv.

will separate some of these varieties from the common chorea with which at present they may be provisionally grouped.

2. *Pre-* and *post-hemiplegic chorea*, a symptomatic affection, first described by Mitchell, characterized by incoördinate, irregular movements, of the same nature but slower, less brusque, than those of common chorea, usually unilateral and dependent upon a lesion in the pyramidal columns between the bulb and the gray cortex. Athetosis, hemi-ataxia, hemi-sclérose en plaque, and hemi-paralysis agitans, are some of the names given to this condition.

3. *Rhythmic chorea*, in which the involuntary movements follow a more or less regular rhythm, often imitating certain expressive acts, such as dancing—saltatory chorea—or the performance of professional acts, as hammering, weaving, etc. Cases of this kind are usually hysterical.

I propose to consider only the common chorea and such of its varieties as have come under observation at our clinics.

Sex.—The greater liability of the female is shown by the following figures:

Males	125
Females	282
Sex not noted	3
	410

This gives 1 male to 2.25 females, a somewhat lower proportion of females than is usually stated.

Age.—Chorea is essentially a disease of childhood and of adolescence.

The age incidence is shown in the following table:[1]

	Total	Under 4	4–	7–	8–	9–	10–	11–	12–	13–	14–	15–	16–	21–25	26–30	31–35	36–40	Over 40
Males	117	7	3	8	7	7	13	9	11		12	4	8		1			
Females	273	11	11	13	21	26	17	23	24	22	11	16	17	32	2	1	1	1
	392	17	13	21	28	33	22	32	35	22	23	20	25	41	3	1	1	1

Arranged in decades the figures are as follows:

First decade	268
Second decade	183
Third "	4
Fourth "	1
Above fourth decade	1

The second and third hemi-decades are the most important periods, containing more than three-fourths of the entire number. Thus:

First hemi-decade	30 cases,	or 7.5 per cent.
Second "	179 "	" 42.1 "
Third "	143 "	" 34.8 "
Fourth "	40 "	" 9.7 "

The age incidence seems earlier in females than in males. Thus, in the females the second hemi-decade contained the greatest number of cases, 129, or 46.9 per cent., while the third hemi-decade in males contained the largest proportion, 54, or 46.1 per cent. After the age of fifteen the preponderance of females is greater than in children.

It is interesting to note that chorea in this country appears to attack children at an earlier age than in Great Britain and on the continent. Thus, in the recent report of the Collective Investigation Committee of the British Medical Association,[1] in which Dr. Stephen Mackenzie has analyzed 439 cases, the greatest incidence of the disease was in the third hemi-decade, and in our table a much larger number of cases, 30, occur in the first hemi-decade against only 6 in the English report. Under four years and over twenty chorea is a very rare disease. It is difficult to determine the earliest age at which the affection begins. Possibly it is in some cases *congenital*. There are two instances in the case-books stated to be of this nature. One of these is given by Sinkler, in his article in Pepper's *System of Medicine*.

A girl (Case 246), aged nineteen, whose mother while pregnant was frightened at the sight of a choreic child. The movements were general and continuous. The intellect was not impaired.

In Case 104, a boy, aged (now) fourteen, the movements were noticed within a few months after birth and have persisted ever since, with variations in intensity. When seen a few weeks ago there were irregular choreic twitchings of the muscles of the face, arms, and trunk. No paralysis; no spasm; head small, and intellect feeble.

In Case 162, a lad, who was at the hospital in 1882, and who returned for examination a few weeks ago, the mother, an intelligent woman, states that she was born with it, and that her mother had chorea very severely while carrying her. The jerky, irregular movements of the infant for the first three or four months of its life are essentially choreic, so that it is very difficult to determine whether, in any instance, the disease is really congenital. Similar, probably identical, in character are the movements of the fœtus in utero.

Senile chorea is even more uncommon. Case 72, was a woman, aged eighty-two. Sinkler has reported this case[2] with one other, the only instances I find recorded in this country. Saundby[3] has collected twelve cases, the ages ranging from fifty to eighty-six, six of each sex. It seems to be an intractable affection, similar in many respects to the juvenile form, not often associated with rheumatism, and the subjects of it are very frequently demented.

Although we meet with cases of chorea in all ranks

[1] I have to thank Dr. Burr, the Resident Physician, for these statistical details.

[1] British Medical Journal, February 26, 1887.

[2] Journal of Nervous and Mental Diseases, 1881

[3] Lancet, 1884.

of society, it is so much more frequent in the pauper and working classes that our knowledge of the disease has been drawn largely from the experience of hospital physicians. In Mackenzie's report to the British Medical Association, the returns, which were largely furnished by general practitioners, give 72.27 per cent. of the cases as belonging to the lower classes.

The *race relations* of chorea have been carefully studied at this hospital by Dr. Mitchell. From a large number of replies to inquiries sent out regarding the prevalence of chorea in the South, he concluded that it was rare in the negro. This appears to be the common experience of those who practise among the colored people. Here and there, however, we find it stated that the children of both races are equally affected. Sinkler[1] confirms Mitchell's statement, and has seen but one case in the full-blooded negro. On this point the records of the institution are very conclusive. So far as I can ascertain, no negro child of pure blood has ever been under treatment here for the disease, and there have been only three or four mulatto children. It is estimated that the proportion of colored population to the white is in Philadelphia about 1 to 25, at which ratio we should have had a very much larger number of colored patients were chorea as common in them as in the whites.

Recently Mulheron, of Detroit, has recorded a case in a negro boy.[2]

I have made inquiries as to the occurrence of chorea among the Indians. Dr. Waldron, of the Hampton Normal and Agricultural Institute, Hampton, Va., writes that he has never seen a case in an Indian, and that there had not been any in the school since its foundation. Dr. McLelland, of the Lincoln Institution of this city, writes to the same effect. Dr. O. G. Given, Physician to the Indian School at Carlisle, Pa., states that during the five years in which he has had medical charge of the children there has been only one case, and that was in a scrofulous and epileptic subject. Professor Robert Bell, of the Canadian Geological Survey, who has studied the habits and diseases of the Indians from Gaspé to the Rocky Mountains, and from Lake Huron to Hudson Bay, has neither seen nor heard of a case. Chief Peter Jones, a physician who has practised for twenty years among the Misissaquis and Six Nation Indians at the Reserve near Brantford, Ontario, informed Prof. Bell that he had seen three cases in half-breed girls, and had heard of two others. He does not think that it ever occurs among the full-blooded Indians. Dr. R. M. Stephen, Government Physician to the Indians of Manitoulin Island, has not met with a case in five years' practice. In twenty-five years' experience in the Canadian North-West, Dr. Schultz has seen only one case, and that was in a half-breed.

Dr. Bell has also made many personal inquiries for me on this point, and concludes that the disease does not occur in the full-blooded Indian, and is exceedingly rare among the people of mixed blood.

Seasonal relations.—For some years past the relation of chorea to the season of the year has been made the subject of careful study at the Infirmary, and in a paper by Gerhard,[3] in Mitcheli's lectures, and, more recently, in a communication by Dr. Morris J. Lewis,[1] we have almost all the data of value which have been collected on this subject. Lewis's work covers our records to date, and is based on a study of 437 separate attacks of chorea. October and November are the months with fewest attacks, 4.1 and 4.3 per cent. respectively. The number increases in December, and in January reaches 8.2 per cent. The greatest number of attacks occurred in March, 15.3 per cent. There is a fall in April, a rise in the number in May and July, and then there is a steady fall until October, when the lowest point is reached. In this country, it is the experience of most hospital physicians, that with the changeable weather of March, April, and May, the cases of chorea applying for treatment greatly increase in number. Lewis's studies include a careful comparison of the number of attacks of chorea with the mean relative humidity, the mean barometer, the mean daily range of thermometer, and the amount of sunshine or cloud. There appears to be a slight "increase in the number of cases with a fall in the mean relative humidity and barometer tracings." The cold, moist months of December, January, and February, show a smaller proportion of cases than March, which has a higher temperature. There is a striking correspondence between the chorea tracing and that of the storm centres passing within a circle of 400 miles radius described around Philadelphia. The smallest number of storms occur in August; there is a rapid rise in the number until December and January. In February there is a slight fall, and in March the highest point is reached, after which there is an irregular fall until August. This seems the most interesting, as it is the most positive, fact brought out in Lewis's study of the seasonal relations of the disease, but, as he remarks, a storm is a very complex disturbance, and it is difficult to say which factor is the baneful one, or how it acts.

Special antecedent conditions.—Temperament plays an important rôle as a predisposing cause of the disease. High-strung, as we say, nervous children, members of neurotic families, are much more liable to the disease than others. The notes do not give exact figures in this matter, but the phrases "bright, excitable child," "alway nervous," come often enough in the records to give a basis to the current opinion. In 59 instances, 14.3 per cent., there was a history of attacks of chorea in other members of the family. In only seven instances is it stated that the mother had also had the disease. In Case 162 the mother and grandmother had both been affected.

Mental conditions.—Psychical disturbance, in some form or other, is a prominent special condition determining the onset of chorea. Fright was given as the exciting cause in 76 cases, or 18.5 per cent. In a majority of these cases the statements seem clear and specific. Thus, to take at random from the list, here are some of the assigned causes of the fright: dogs (very common), house on fire, fright in a boat, burglar, father drunk, brother burned to death, etc. We could wish for more definite details, in many instances, as to the interval of time which elapsed between the fright and the onset of the symptoms. In a few cases the attack seems to have come on at once. Thus, R. R.,

[1] The Medical News, October, 1882.

[2] Medical Age, June, 1887.

[3] Loc. cit.

[1] Loc. cit.

aged seven, mother had chorea; was healthy until July 27th, when she cut her foot on a piece of glass and was exceedingly frightened. The choreic movements began at once, rapidly became general, and the speech was affected. The attack was severe, and lasted between two and three months. Oddly enough, just one year later, she returned with a second attack, which the mother said was excited by the peck of a duck.

More commonly there is an interval of one, two, or more days between the fright and the appearance of the movements; in very many cases the attack is simply *post-hoc*.

In twelve cases there was a history of injury preceding the attack, usually a fall. In two cases wounds of the fingers appeared to be the exciting cause.

Various other sources of mental worry or excitement are mentioned, such as "trouble at home," "a scolding master," a "cross foreman," "excitement of a revival meeting."

A really important factor is the strain of education, particularly in young girls during the third hemi-decade. Although in only thirty cases "overwork at school," "examinations," "worry about lessons," are given as exciting causes, I feel sure that in a much larger proportion the stimulation of school life is responsible for conditions which favor, if they do not actually precipitate attacks. Keen, active-minded little girls, from ten to fourteen years of age, anxious to do well at lessons, stimulated in their efforts by parents and teachers, form a large contingent of our cases. In London, Sturges has for some time studied this question with great care, and his papers on school-made chorea call attention to a serious danger in the forcing system which prevails so largely in our modern methods of education.

Reflex irritation is thought to influence in many cases the onset of chorea, but I have looked through the records in vain for a good instance. The presence of worms was noted in seven cases; in three it is distinctly stated that the expulsion of the parasites had no effect on the disease. The *chorée vermineuse* of some of the older French writers has no place in the Infirmary records. Perhaps certain of the cases which followed injury might be regarded as reflex in character. Jacobi[1] has called attention to the important part which nasopharyngeal irritation plays in some cases of local chorea, particularly of the face. It is a point worthy of close attention.

Imitation does not appear to have influenced the onset in a single case. Trousseau and other French writers have laid stress upon this factor, which may prevail in institutions containing a large number of children, but in Dispensary practice mimicry need not be taken into account. In Mitchell's lectures will be found a graphic description of an epidemic of convulsive seizures, with choreiform movements, which affected the inmates of the Church Home for Children in 1850. In this instance imitation played a most important part in the extension of the disease.

Antecedent illness.—Naturally, in inquiring into the history of children, we have statements of the attacks of the various fevers and infantile disorders, but there is one special disease, *rheumatism*, which has long been known to have close associations with chorea, and which, in this respect, takes the first rank. It is important to separate the cases with a clear history of articular disease from those with vague pains in the joints and limbs. In the records there are 63 cases, or 15.3 per cent., with rheumatism; I have included here all cases in which there was distinct articular swelling with heat and pain. Some of the cases were slight enough to be called subacute. We find two groups of cases, the one in which the chorea comes on with or follows immediately upon an attack of acute rheumatism, and the other in which the rheumatism antedates some months or years the onset of the chorea. In 31 cases the movements followed the arthritis, usually during convalescence. In some instances it was impossible to say which came first, and, indeed, there are cases in which the rheumatism follows long after the chorea. In 11 cases the rheumatism had preceded the chorea for periods of from two to twelve years, and did not recur before or during the attack. In a number of cases the chorea followed "some months" after the rheumatism and there was no joint trouble at the time of the onset. We may conclude from our records that about 15 per cent. of the cases show antecedent rheumatism, but in only 7.5 per cent. was the rheumatism immediately associated with the chorea.

To the lay mind rheumatism is a convenient term embracing many affections, and I do not place much weight on answers given to queries regarding the occurrence of rheumatism in the family, but it may be noted that in 49 instances the father, mother, brother, or sister had had this affection.

It is interesting to compare these Infirmary figures with those of the Collective Investigation Report of the British Medical Association. The percentage of cases with antecedent rheumatism was 26, but it is not stated in how many of these cases the chorea followed immediately upon the joint trouble. Our records show a much smaller percentage than in the majority of English or French statistics which are to be found in the special monographs and treatises.

As great care appears to have been exercised in this inquiry, I think the Infirmary records afford reliable information in this respect, and we may safely conclude that in more than three-fourths of all the cases there was no history of *articular* rheumatism. In 23 cases there were pains in various parts, sometimes described as rheumatic but not associated with joint trouble. Whatever may be their nature, it is important to separate these cases from those of true rheumatism with distinct articular swelling. It is quite possible that many of these cases are truly rheumatic, as the joint trouble in children may be quite trifling, yet, in going through the records it was found impossible to make any separation between cases in which the pains were truly rheumatic and those in which they were the vague so-called growing pains so often complained of by children. Assuming all such cases to be rheumatic and adding them to the 63 cases of positive rheumatism, it would raise the percentage to nearly 21.

Of other diseases, scarlet fever was an antecedent in 95 cases, or over 23 per cent. In a few cases the chorea followed or came on with a rheumatic complication of this disease.

There was a record of measles in 42 cases, and of whooping cough in 13, but doubtless less strict inquiry

[1] Amer. Journ. of Med. Sciences, 1878.

was made regarding these diseases. It is to be regretted that the notes were not more full on the question of whooping cough, as Sturges[1] states that this disease has more than double the frequency in choreic children that it has in others.

Other antecedents were anæmia, worms, marasmus, typhoid fever, malaria, chicken-pox, smallpox, and diphtheria, but the cases coming under each heading are too few for any practical purpose. Anæmia is more frequently, I think, a sequence than an antecedent, though in some instances there was marked pallor with failing health some time before the chorea began. There is at present in attendance at the Medical Dispensary of University Hospital, a case of chlorosis in which hemichorea developed while under observation.

Kinnicutt, of New York, and Kingsley[2] have written upon the possible association of chorea with malaria. There are five cases in which the children are stated to have had intermittent fever, but I cannot gather that there was any connection between it and the onset of the chorea.

ORIGINAL ARTICLES.

THE PATHOGENIC CONDITIONS OF ALBUMINURIA.

NEW EXPERIMENTS AND CLINICAL INVESTIGATIONS.

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The conditions which determine the passage of albumen into the urine should form the basis of any explanation of the mechanism of albuminuria in the different pathological conditions in which it occurs.

For some years the difficulty of finding a satisfactory explanation of the different kinds of albuminuria has been increased by the admission that there may exist a physiological albuminuria lasting for a variable period, which I believe I was the first to describe in 1875. (See Congress of Brussels.) But I believe that it is not correct to speak of a physiological albuminuria. It might, indeed, be understood in the sense that it may exist in individuals who walk about, eat, etc., like those in good health; but this is not proof that they have not some slight, perhaps transitory disturbance, which is really the cause of their albuminuria, so that we should not describe it as truly physiological. My researches for thirty years past have fully confirmed me in the opinion that albumen is not a principle which is intended normally to pass out of the living economy.

The relation of albuminoids to albuminuria is generally (except in certain kinds of albuminuria of renal origin) the same as that of glucose to glycosuria. In health both these principles circulate in the blood, and neither is intended to be eliminated. Whenever their quantity or quality becomes such that they are no longer suitable for carrying out their physiological purposes, they are eliminated or useless substances, foreign to nutrition. The evidence of this seems to me indisputable. Another fact sustains and enforces this view. In all cases of so-called physiological albuminuria the daily quantity of albumen eliminated is very small, considerably under $3\frac{3}{4}$ drachms, or almost this amount, and this lasts for a limited or intermittent period only. In health no albuminuria of any duration has been observed, in which the daily quantity of albumen eliminated amounts to half a drachm, a drachm, or two drachms and a half, so that it follows that the mechanism of the so-called physiological albuminur a must necessarily be of the same character, as in that of disease. The pathological condition may be insignificant, incapable of producing appreciable consequences, but the presence of albumen in the urine, no matter how small the quantity, should always be considered as a morbid phenomenon, a functional disorder, for which a cause should be sought, and it may occur without any renal disease, as I have shown as far back as 1861.[1]

In following out the admitted theories, I was led, in 1879 (see Congress of Amsterdam and *Revue Mensuelle de Médecine*, Paris, 1880), to study the passage of albumen into the urine in relation to the three factors which preside over the secretion of urine in the normal state, that is to say:

1st. Mechanical conditions of the circulation of the blood.

2d. Physico-chemical constitution of the blood.

3d. Histological condition of the kidney.

In preceding papers (see *Archives de Physiologie*, Paris, 1881, 1884, and *Bulletin de l'Académie de Médecine de Paris*, September 7, 1886) I have shown beyond question that as soon as the albuminoids of the blood became so changed in their chemico-molecular constitution as to be dialysable and unassimilable, they will be eliminated by the kidney.

Whether this foreign body be albumen derived from the food which from any cause whatever has not completed the chemico-molecular changes to fit it for fixation in the tissues, or an excess of chloride of sodium, of water, or of any poison whatever, either introduced from without or formed within the organism, it is all the same: the kidney is charged with removing it from the body, which remains normal because of this incessant removal. It is useless to seek for the cause of the passage of albumen in the greater or less porosity of the membrane of the glomeruli, or in the greater or less resistance of the glomerular epithelium (Leube). These hypotheses are gratuitous and quite at variance with good physiology. Indeed, that albumen is eliminated by the kidney because of its non-assimilability is proved beyond question by the fact that when we attempt to repair the loss of albumen by increasing the nitrogenous elements of the food, albumen becomes more abundant in the urine, because the increase in the albuminous load intensifies the vice of nutrition which occasioned defective assimilation of albuminoids.

I need not now discuss the pathogenic conditions of the great majority of cases of albuminuria. The principal object of this paper is to examine those conditions in relation to increased blood-pressure and histological alterations of the kidney, hitherto

[1] International Medical Congress, London. Transactions, vol. i.
[2] St. Louis Medical and Surgical Journal 1881.

[1] Gazette des Hôpitaux, Paris, 1861, No. 101.

considered as the causes of albuminuria, deducing conclusions both from experimental pathology and from clinical observations.

Experimenting first on the mechanism of the circulation, the conclusion was reached that increased pressure in the glomeruli may cause albumen to appear in the urine. But contradictory results are not wanting, and it may be asked whether these do not lead to the conclusion that the experiments have not taken account of derangements not connected with mere change of blood pressure. This error too often occurs in the researches of experimental pathology, and we should always remember that when we experimentally produce a serious derangement in the relation of different functions, it is impossible to come to exact conclusions as to the true mechanism of the symptom which we wish to elucidate. Thus, for example, the ligature of the aorta (Robinson, Meyer, Munck, Senator, etc.) above the renal arteries, alone or in connection with a ligature of the coeliac and superior mesenteric arteries (Litten), produced in the former case albuminuria, while in the latter Litten did not observe albuminuria. Nor were the experiments more conclusive in which albuminuria was observed as a consequence of increased pressure throughout the entire vascular system, caused by injections of pure water (Mosler, Kierulf, Goll), because then another very powerful factor came into play, viz., the derangement of the physico-chemical constitution of the blood, principally as regards the chemico-molecular constitution of the albuminoids, of which a very slight amount may injure or modify the biological relations. So that there is at this time no experiment which can be considered as proving beyond question the hypothesis that increased blood-pressure is one of the causes of the passage of albumen into the urine, especially as this hypothesis has been advanced and received because of experiments, purely physical in their character, made with albuminous fluids and animal membranes under different pressures.

In the course of a long-continued study of albuminuria, I have been often surprised at its absence in a great number of cardiac cases observed at my clinic in which the conditions for a passive hyperæmia of the kidneys were most favorable, and my surprise was intensified when I found on autopsy that the kidneys were cyanosed, and that there was sometimes even an interstitial nephritis, whereas in other cardiac cases, with valvular lesions, venous stasis, dropsy, etc., in patients presenting the same clinical conditions as the preceding, albuminuria was present. Finally, a fact well worthy of note: in these last cases, when by means of treatment we succeeded in restoring the equilibrium of the circulation by controlling the irregular action of the heart, and the venous stasis, dropsy, etc., disappeared, there was at once a more or less considerable diminution in the daily amount of albumen eliminated, but it was never entirely absent. Evidently some other factor existed causing the elimination of albumen and this was the factor I sought to eliminate.

Following out preconceived ideas, some clinicians have explained these differences by alleging the coexistence of a derangement of the renal circulation and an alteration of the epithelial cells, (see *Riforma Medica*, 9, 10, 11, July, 1887, clinic of Prof. Maragliano by his assistant, Dr. Livierato). This explanation much resembles that of porosity advanced by Leube, and, in order to admit it, it must be supported by a preliminary demonstration that the renal epithelium has a different selective affinity for albumen under different nutritive alterations. Without that, it is reduced to a mere hypothesis, and, for my part, I consider it inadmissible.

I have undertaken to reconcile the apparent contradictions by new investigations in experimental pathology, with a view to ascertain whether the blood-pressure alone can cause the passage of albumen into the urine. In order to do this, I had recourse to a very simple expedient, viz.: the transfusion of a certain quantity of blood from one animal to another of the same species, taking care to measure the pressure before and after the operation. It is evident that in this way we can effect an increase of pressure in the entire circulatory system resembling that observed in diseases, without producing serious functional derangement and thus complicating the experiment with other factors. The following is the result of my experiments.

Experiment I.—*April 12, 1887.* I took two dogs, the larger having a weight of 9.3 kilos., and the smaller 4.5 kilos. Before commencing the experiment the dogs were kept separate, each upon the same diet of bread, broth, meat, and milk. For three days an analysis of urine showed no trace of albumen and no morphological morbid element. The fourth day I firmly fixed the two dogs after the method of Bernard, and connected, by a transfusion apparatus, the carotid of the larger dog with the femoral vein of the smaller. Before opening the communication I took the blood-pressure of the smaller dog by the hæmodynamometer of Trauck, and found the initial pressure to be 29 mm. The blood was then allowed to pass for ten minutes. The hæmodynamometer went up gradually to between 36 and 37. Fifteen minutes the hæmodynamometer remained steady at 33, the little dog, weighing 5 kilos., having gained 450 grammes in blood. The dog was returned to his kennel, and an assistant collected the urine as it was voided. The diet was the same as before the experiment. The animal voided 300 c. c. of urine in twelve hours. The urine was reddish, under the microscope hæmoglobinuria was observed, and there was a trace of albumen corresponding to the amount of blood in the urine.

Experiment II.—*April 13, 1887.* A very large dog weighing 15.4 kilos., and a small dog weighing 5.3 kilos. were used with the same precautions as in the preceding experiment. No albumen in the urine. Initial pressure of hæmodynamometer in the small dog was 29.30 mm. Transfusion for twelve minutes from the carotid of the large dog to the femoral vein of the small dog. The hæmodynamometer went up and stood between 41 and 42 mm. At twenty minutes after the transfusion the pressure went down and remained steady at 35 mm. After the experiment the animal weighed 5.950 kilos., having gained 550 grammes of blood. Half an hour after the experiment terminated the little dog vomited a thick, glairy, and sanguinolent liquid; weighed again, he had lost 105 grammes; within twenty-four hours he voided 550 c. c. of urine. Color sanguinolent, spec. grav. 1.007, albumen 1 in 1000. Under the microscope a considerable number of red globules appeared. There was evidently polyuria and hæmoglobinuria.

19th. The animal was depressed, weighed 5.2 kilos. He ate only meat soup, passed but 90 c. c. of urine, which was still more sanguinolent and contained many granular casts. Spec. grav. 1.032, albumen 3 in 1000, evidently arising as before, from the hæmoglobinuria.

20th. Forty-eight hours after the transfusion, the animal weighed 4.92 kilos. Urine for twenty hours 110 c.c., until 6 A. M. next day (death of the animal). Spec. grav. 1.030. Color, slightly reddish. Contained some blood globules and a great number of granular and granulo-epithelial casts. Trace of albumen. Refused all food and drink.

21st. Died sixty eight hours after the transfusion. The *autopsy* showed the kidneys slightly swollen, dark red on section; cortical substance engorged with blood with brighter red and some yellowish points. Liver engorged with blood; on section deeper red than normal. Heart showed slight hypertrophy of the left ventricle.

Microscopical examination. Hemorrhage at many points of the medullary and cortical substance both between the tubes and into the cap-sules of Bowman. In other glomeruli there was observed a slight dilatation of the vascular loops. In some capsules there was observed a small quantity of granular substance.

Epithelium of the tubuli generally normal, rarely the epithelium was wanting and a small quantity of a granular substance observed. In one tube a cast was seen, besides this the large vessels contained a granular mass.

This experiment was repeated with four other dogs with identical results. In two experiments I transfused only 250 and 280 grammes of blood. In the first the difference shown by the hæmodynamometer was 3 mm., the weight of the animal being 4.85 kilos. In the second experiment a difference in the hæmodynamometer of 2 mm., the dog weighing 5.3 kilos. In the last two experiments the microscope showed but few globules of blood, the color of the urine being normal, no appreciable albuminuria, microscopical examination showing but slight hyperæmia.

The conclusion to be drawn is clear. Increase of pressure in the renal circulation produces first polyuria, as Charcot has already shown, without producing albuminuria properly so-called, and a more or less considerable hæmoglobinuria, and perhaps, also, a true blood extravasation, corresponding to which there is present a certain quantity of albumen. The kidneys are always hyperæmic without alteration of the epithelium of the tubuli. The granular substance which is observed within certain capsules and tubes here and there should be ascribed to the blood which has been extravasated and altered for three previous days.

In order to make these experiments still more conclusive, I repeated them, on the one hand, using transfusion upon a little dog, and then trying on another dog an intravenous injection of defibrinated blood which I had drawn immediately after the conclusion of the former experiment from the large dog, already used for transfusion.

It is evident that in these new experiments I intended to reproduce the same mechanical conditions, that is to say, the same general increase of blood-pressure in the two smaller dogs, employing in the one case dead blood drawn from the artery and defibrinated by whipping, so that the same physico chemical conditions did not exist as in the living, and circulating blood transfused from the other dog.

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Experiment, May 1, 1887 (10 A. M.).

I took three dogs:—

1st. A large dog, for transfusion, weight . . 22.600 k.
2d. Two other dogs, which I will distinguish as
A, weighing . . . . . 5.950 k.
B, " . . . . . 5.900 k.

For four days the same conditions of uniform diet were followed as in the previous experiment. Urine normal, non-albuminous, except a slight opalescence, not susceptible of estimation, in dog A.

The following is the analysis of the urine twenty-four hours before the experiment:

	Dog A.	Dog B.
Urine,	500 c. c.	350 c. c.
Sp. gr.,	1.015	1.011
Reaction,	Acid.	Acid.
Color,	Straw.	Yellowish.
Appearance,	Slightly turbid.	Limpid.
Albumen,	Opalescence.	None.
Urea,	12.781 gr. per 1000	10.232 gr. per 1000

Transfusion was effected from the carotid of the large dog into the femoral vein of dog A. Initial pressure in the carotid of dog A, before the transfusion, 27 to 28 mm. After five minutes of transfusion the pressure oscillated between 34 and 35. The operation was stopped, the weight of the animal found to be increased 410 gr. An hour after the operation the animal voided 85 c.c. of urine, sp. gr. 1.013, albumen; opalescence greater than before the operation. Three hours later he again voided 100 c.c. reddish urine, sp. gr. 1.011; slight hæmoglobinuria, a trace of albumen.

While waiting there had been drawn from the same carotid of the large dog nearly half a kilogramme of blood, and having defibrinated it by whipping, 350 gr. of it were injected into the external saphenous vein of dog B. Initial pressure in the carotid oscillated between 27 and 28 mm. The injection was made slowly, the operation lasting ten minutes. After the intravenous injection the hæmodynamometer marked 31 to 32, and remained there. Animal weighed 6.250 k.

An hour after the injection, 70 c.c. urine voided, containing 0.50 c. c. of albumen; color nearly normal. Under the microscope a few scattered red blood globules. During the two hours following the injection the animal three times vomited the milk, soup, and bread which he had previously eaten.

In order to compare more readily the experiments I have placed in the following table the results of the analysis of urine during forty-eight hours after.

May 2.

	Dog A. (transfusion). [Ate during the 24 hours nearly half his food, meat, broth, bread, milk.]	Dog B. (injection). [merely drank the broth, refusing the rest.]
Weight . . .	5.820 k.	5.600 k.
Urine in 24 hours .	390 c. c.	180 c. c.
Sp. gr. . . .	1.014	1.023
Reaction . . .	Neutral.	Alkaline.
Color . . .	Reddish yellow.	Bright yellow.
Appearance . .	Slightly turbid.	Slightly turbid.
Urea per m. . .	14.881 gr.	15.431 gr.
Albumen per m. .	0.50 gr.	8.100 gr.
Microscope .	Large number of red globules; epithelial cells; no casts.	A few scattered red globules; epithelial cells; no casts.

May 3.

	Dog A. (Eats very little.)	Dog B. (Refuses all food and drink.)
Weight . . .	5.350 k.	5.065 k.
Urine in 24 hours .	255 c. c.	190 c. c.
Sp. gr. . . .	1.029	1.020
Color . . .	Reddish yellow.	Dark yellow.
Reaction . .	Acid.	Neutral.
Appearance . .	Slightly turbid.	Quite turbid.
Urea per m. . .	22.190 gr.	14.260 gr.
Albumen per m. .	0.65 gr.	12.50 gr.
Biliary pigments .	Trace.	A notable quantity.

	Dog A. Eats very little.	Dog B. Refuses all food and drink.
Microscope	Many red globules; epithelial cells; a few hyaline casts.	Hyaline and granular casts; epithelial cells colored yellow; a number of fresh bacteria.

Dog A, strength feeble, yet stood up. He was killed on the morning of May 4.

Dog B, had been all the time very dull, and was found dead at 7 A.M. May 4.

The microscopical examination of the kidneys of dog A gave similar results as the first experiment, but less in amount, and more limited in character.

The microscopical examination of the kidneys of dog B showed diffuse hemorrhage everywhere. In the tubuli of both the medullary and cortical substance true casts were seen, some quite large. In other tubes some epithelial necrosis was found. In the glomeruli the epithelium was in rather good condition. There was an accumulation of a granular or grumous substance, and its behavior with acetic acid and picro-carmine led me to believe that it was an albuminous substance which, after traversing the glomerulus without undergoing any appreciable alteration, had passed into the tubuli, where it had coagulated, forming casts. As a consequence, in some tubuli the epithelium was found to be more or less altered.

From these experiments conclusions can be clearly drawn. On the one hand, they show that in consequence of transfusion and simple increase of blood pressure there is no passage of albumen, and that, on the other hand, a death of the circulating albuminoids is sufficient so to change their physico-chemical constitution that they become a foreign substance to be totally eliminated, although the blood pressure was less than in the transfusion experiments.

Another fact naturally presents itself, and again proves what I demonstrated several years ago, namely, that the functional strain that the kidney must undergo in order to eliminate useless albuminoids sets up secondary irritative action that simple blood extravasation does not. This is shown clearly in the histological changes in the kidney of dog B compared with the almost normal condition of the kidneys of dog A, excepting the mechanical hyperæmia and the presence everywhere of red globules.

In order to complete these experiments I had yet to clear up a doubt which had arisen in my mind with regard to those cardiac diseases associated with albuminuria, in which after an improvement in the circulatory mechanism by proper treatment, there was a considerable diminution but not a complete disappearance of albuminuria. This had led me to believe that if the increase of blood pressure alone was incapable of effecting a filtration of albumen we still might suppose that it was capable of sensibly increasing it when another fundamental, pathogenic condition preëxisted, namely, the dyscrasic condition of the albuminoids, or, as may be said, the pressure of a large quantity of dialysable albumen in the blood stream which ought to be forcibly eliminated as incapable of playing its part as an assimilable substance, and on that account foreign to the organism.

I believe that I have succeeded in demonstrating in a very conclusive manner the hypothesis which I had conceived.

I took a dog weighing 8.3 k. and put him under observation on a diet of broth, meat, and milk soup for three days together to assure myself that the urine was normal and free from albumen. I commenced subcutaneous injections of 60 grains of white of egg diluted with 20 grains of distilled water, dividing this dose into four injections during twenty-four hours. After a few hours albuminuria became manifest, and the amount of albumen eliminated in twenty four hours increased slowly. Ten days after the injection the animal voided 3.51 grains of albumen during twenty-four hours.

I effected a transfusion of blood into this dog from a larger dog under conditions similar to those of the experiment of May 1st. The urine of the large dog was quite normal and without albumen. Initial pressure in the carotid of the albuminuric dog before transfusion 28 to 29 mm. Transfusion lasted eight minutes, pressure oscillated between 33 and 36, becoming steady at 34. Animal weighed after transfusion 8.85 k. gaining 5.5 grains of blood. In the urine collected during twenty-four hours after the operation, there was found 620 grammes of albumen, nearly double what the albuminuric dog had voided before the transfusion.

This clearly proves that when there already exists in the blood, as I have before stated, a certain amount of albuminoid principles, which, by their physico-chemical constitution are not assimilable, the increase of blood-pressure increases filtration in an almost mechanical manner, in the same way as occurs when water produces polyuria. In this phenomenon the renal filter is passive, and the experimental results fully confirm the hypothesis which I had put forward to explain—the phenomena of albuminuria persisting in cardiac cases after the restoration of the vascular equilibrium. But in practice another thing may happen. When we put these cardiac patients under a treatment of tonics, and of remedies which regulate the heart, and at the same time on a vigorous milk diet, then the albuminuria totally disappears, because with the curative action of the change of blood-pressure, there is also a reconstructive action of the albuminoids of the blood under the influence of the milk diet, due, doubtless, to the truly enormous assimilability which occurs in derangements of nutrition.

It now remains to finish the second part of my work, that is to say, to determine the influence which alterations in the renal filter may have on the albumen of the urine. In order properly to judge of this question, it will be sufficient to recall the numerous clinical cases in which there is not the slightest trace of albumen in the urine during life, while the autopsy shows the existence of a nephritis, principally interstitial, but coexisting with an epithelial lesion. There is not an observer who has not recorded many facts of this kind. It is evident that if nutritive alteration of the epithelium of the renal filter were necessarily the cause of albuminous filtration, the exceptions just cited could not occur, but experimental pathology may to a certain extent clear up this question. For this rea-on I have repeated the experiments already made by others, especially to determine the relation between the degree of histological renal alteration and the quantity of albumen eliminated. The substance which I have em-

ployed is cantharidine. I produced poisoning, both acute and chronic.

In acute poisoning, produced by injecting under the skin of a hog of medium size (5.14 k.) a solution of cantharidine in glycerine (4 parts glycerine to 5 parts cantharidine), the urine at the end of an hour became sanguinolent, and contained 0.55 of albumen per m. The animal died in three hours. At the autopsy the cortical substance was found swollen and congested. The glomeruli much changed. In some of them the lining epithelium was partly gone, so that half of a glomerulus was still invested with epithelial nuclei, while the other half was transformed into a fibrous mass without nuclei. Lymphatic cells were found in the glomerular cavity with a granular substance, and red blood-globules in great number. As to the tubuli, there was found in their interior an amorphous substance (a product of exudation according to Cornil), and in some places there was a preliminary stage of epithelial necrosis.

Chronic poisoning by cantharidine is still more significant. For three weeks I carried on subcutaneous injections of cantharidine in dogs of about the same size. The daily dose was $\frac{3}{50}$ of a grain. The urine, slightly sanguinolent, especially during the first few days, never showed more than 0.70 to 0.85 gr. per m.), a certain quantity of which related to the exudation of blood due to the inflammation. After three weeks the renal alterations were more considerable. Besides the glomerular alterations already mentioned, relating to the very marked inflammatory action in some places, there was considerable alteration of the tubuli. The epithelium was flattened, and in the lumen of the tube there was found a hyaline substance (exudate). In some places the epithelium of the tubuli had a granular appearance. In other places the convoluted tubes showed cells undergoing granular, fatty degeneration.

Comparing these alterations with the very slight quantity of albumen contained in the urine, it is evident that there is here not only a passage of albumen, pure and simple, but a filtration of serous fluid from the blood, due to the inflammatory condition of the kidney, which is not at all the same thing, and which clearly explains the small quantity of albumen in the urine, while on the contrary, in true albuminuria, characteristic of Bright's disease, there is a considerable quantity of albumen given off in twenty-four hours, at a period of the disorder when the histological alterations of the filter are high, compared with those produced by cantharidine poisoning, though this latter has a degree of albuminuria much less; and to be exact, we must say that this albuminuria is not the albuminous filtration, pure and simple, observed in some diseases, principally in Bright's disease. It is on the contrary, one of the effects characteristic of all inflammatory action.

The final conclusion from these investigations is that the fundamental pathogenic conditions which produce elimination of albumen by the kidney is the dyscrasia of the albuminoids, or, in other words, the peculiar alteration in their physico-chemical constitution which makes them unsuitable for assimilation, and consequently forces them to be eliminated by the emunctories and particularly by the urine and the bile. It is evident that albuminocholia only occurs when there is a condition of dyscrasic albuminuria.

The two other conditions which relate to urinary secretion are not capable of effecting the passage of albumen from the blood through the renal filter, because in their perfectly normal constitution the albuminoids of the blood are not intended to leave the organism, as stated at the beginning of this paper. This is an error of physiology produced by the exaggeration of a purely anatomical point of view. The other factors in the urinary secretion, that is, increase of blood-pressure and histological alterations of the glomeruli and tubule, play an entirely secondary part, and are not concerned in the true albuminuric pathogeny, because the change of pressure occasions albuminuria only when it already exists by reason of a dyscrasic condition, and the histological alterations brought about by inflammatory action necessarily give rise to that slight elimination of albumen which characterizes all inflammatory exudations.

The practical conclusions to be deduced from these investigations are as follows:

1. We should absolutely give up the idea still current in practice that albuminuria must always coexist with nephritis. The most frequent case of chronic albuminuria is that in which albumen filters through the kidneys because of defective assimilation of albuminoids.

2. We must abandon the idea still held by many, that we can supply the loss of albumen by a highly nitrogenous diet, because this can only increase the albuminuria, the overloading of the organism with nitrogen only augmenting the defective assimilation of albuminoids. On the contrary, as soon as albumen is seen in the urine we should at once have recourse to a milk diet, which in a few days is sufficient to cause the albumen to disappear, or at least to decrease considerably.

3. We must banish astringents of every kind in treating albuminuria, especially that of Bright's disease, because we must recognize that the elimination of albumen by the urine is for a definite and necessary purpose, and that by reason of this incessant effort the organism maintains its integrity. The use of gallic acid as an astringent has happily done neither harm nor good, because it was based upon a pharmacological error, for gallic acid is not an astringent, but we still find that certain very powerful styptics, like the preparations of lead and iron, which are unquestionably injurious to patients, are recommended, and I have often found their effects to be very dangerous, aggravating the principal disorder where they succeed in diminishing the filtration of albumen by their action on the capillaries.

THE TREATMENT OF THE FINAL STAGES OF PHTHISIS.[1]

By J. H. MUSSER, M.D.,
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The treatment of phthisis is of the most intense interest to the busy practitioner. No discourses in

[1] Read at the meeting of the American Climatological Society, Baltimore, 1887.

medicines are received with more avidity than those which herald a new method for the treatment of consumption, or hurl forth a new specific for its cure. The reason is obvious. But it is quite true, also, that a very large, indeed, too large a share of the monographs deal with the incipient stage of phthisis, and leave the treatment of the final stage to be evolved from the more or less limited experience of the practitioner. In fine, it is too often forgotten that we must alleviate suffering as well as cure disease. The burden of the subsequent, without a doubt most trite, remarks applies to the treatment of the final stage. Neither the first, nor the second, nor the third stage in its entirety, will be considered; only that portion of the third stage which precedes the finale. The racking torment of the beginning has passed; the dreadful anguish of the middle period is gone; the third period is fast waning, and that slowly creeping march of suffering and forbearance, filled with the inspiration of hope, has begun, to end only in the grave.

What are we to do in these final hours of suffering? Are we able to meet the demands upon us? Is the professi in sufficiently taught to administer to the comfort of these afflicted ones? In vain does one look to the monographs and journals for suggestions; no words are uttered in the lecture-room; for aught we gather from medical literature the care of the patient dying of phthisis devolves entirely upon the nurse. Those of us who are hospital physicians alone can scarcely appreciate the mental anxiety and emotional distress of him who daily administers to the wants of a patient, too often a friend, dying of this disease. It is easy for the *chif* to leave such duties to the interne or the nurse. Quite different, however, for the family practitioner. In these cases above all others the powers of the true physician are beautifully displayed. Here it is that the exercise of the high and holy qualities typified of old by the Master Physician are essential.

Yet, withal, a thorough knowledge of therapeutics is required for the pain that is here, and the ache that is there; for the cough of to-day, and the laryngeal spasm of to-morrow; for the dyspnœa of manifold causes; for the vomiting in the morning and the retching at night; for fever and sweating; for wakefulness and sleep; for the thousand and one ills—to relieve which the physician must have a mind fertile of expedient, and abundant of resource.

The suggestions regarding the management of the late stage of phthisis are derived alone from the writer's personal experience; much more profitable though it would be, time prevents detailing the experience of others.

External symptoms.—For the relief of erythema from pressure and moisture, remove the cause, if possible, apply astringent lotions and drying powders. The extract of hamamelis diluted, or the aqueous extract of the shops; borax and alcohol; the latter alone; sulphate of zinc, twenty grains to a pint of water; alum and water; carbolic acid (ten drops) in water (℥j); or alum and alcohol carefully applied, is grateful and remedial. Starch, rye flour, fullers' earth, oxide of zinc, subnitrate of bismuth, iodoform and starch, are drying powders, named in the order of cheapness, that are efficient. For painful erythemata, iodoform, oxide of zinc, and subnitrate of bismuth with starch in combination, answer well.

Iodoform	1 part.
Zinc	2 parts.
Bismuth	2 parts.
Starch	4 parts.

A saturated solution of iodoform in ether, applied every day, or every other day, seems to relieve pain and remove congestion. A mixture of iodoform and surgical collodion relieves pain quickly. One must not forget the conventional soap-plasters, while glycerine, applied frequently, is also of service. Ointments of iodoform, or of zinc, with the extract of opium or belladonna, are often necessary. For bed-sores remove pressure, and apply, by dusting, iodoform, Peruvian bark, oxide of zinc, or subiodide of bismuth. Oakum saturated with balsam of Peru is often excellent. Surgical principles will guide in the treatment of exceptional ulcers.

Œdema of the legs is frequently most distressing; bandages and elevation of the limbs are required. The swollen legs are the seat of a very painful erythema; here again, sedatives, as laudanum, and lead water, or hamamelis, are required. One of the easiest prepared and most soothing applications for any œdematous erythema, is the so-called starch poultice; ordinary starch mixed with water to the consistency of thick cream, spread on linen, and applied.

Apart from the usual pains in the thorax, the patient suffers from general aching and soreness, and from local areas of pain. Rubbing with stimulating applications, alcohol, soap liniment, arnica, chloroform liniment, or with dry heat or applying hot flannels, are necessary. Local pains may be relieved if in the course of the nerves, or in the extremities, or where undue pressure has been exerted, by cannabis indica; laudanum may also be used, but is inferior in value; lanoline is a good vehicle for any substance. Plasters are not generally pleasant; belladonna, opium, and soap may be selected.

Chest pains are usually severe. Use dry heat, by means of hot cloths, hot plates, or hot water bags, or sinapisms, or rubefacient liniments. Pain in the epigastrium and about the heart often occurs in the last week, and is most horrible; dry heat is the most serviceable of external applications. The pain appears to be due to tension on the adherent pleura by collapsing or contracting cavities. The secret of success in the treatment of the general and local pains, is the ability to ring the changes on various articles; the wrought-up nervous system, conjures up, or intensifies pains, which require an agile mind to relieve.

Gastro intestinal symptoms.—For the dry, parched, or fevered lips, use cold cream; camphorated or benzoated oxide of zinc; camphor water and glycerine, with or without borax, or boracic acid; or even glycerine alone, may be used. An erythematous stomatitis is often present; demulcents are required. Decoctions of marsh-mallow, or gum arabic, are soothing; morphia, or the syrup of poppies in a demulcent, relieves the burning distress. The slippery elm

bark of boyhood days, chewed, furnishes a soothing coating to the mucous membrane. The burning that attends erythemata may be relieved by allowing bits of borax to dissolve in the mouth, or by applying boracic acid locally. Ten grains of the latter to a half ounce each of water and camphor water are sufficient. Alkaline waters iced are grateful.

For ulcerative stomatitis and thrush, phenol sodique, Dobell's solution, and Listerine, either of them well diluted, are detergent, and often soothing. If the ulcers are few, iodoform in ether touched on them will quickly heal. Boracic acid and camphor water in distilled water is a cooling mouth wash; myrrh is commonly used by the laity. Alcohol in water can be used; a solution of the bichloride of mercury (1:1000) in iced water seems to be cleansing. Flatulency is a most distressing cause of suffering. External applications of heat, dry or moist, are required. The aromatic spirits of ammonia, spirits of chloroform, Hoffman's anodyne, brandy and lime-water, creasote and charcoal in pill, with or without pepsin, or a mixture of carbolic acid, tincture of cardamom, bicarbonate of soda, with mint water, most frequently relieve it. The recent preparations of pepsin, and pancreatin, are of inestimable value. A bitter before eating, with or without an alkali, prevents a succeeding flatulency: either nux vomica, gentian, and quassia.

Vomiting arises from laryngeal irritation, from cough, from exhaustion, from local gastric irritation, by food undigested undergoing fermentation. Remove the laryngeal irritation by the local application of astringents and anodynes, by glycerite of tannin with or without morphia, or by astringent and anodyne lozenges. The vomiting of food by cough is prevented by administering morphia half an hour before meals, or by taking deodorized tincture of opium before the meal. The vomiting that occurs after rising is often prevented by taking some stimulant with nourishment, before assuming the erect posture: sherry and egg, or milk and brandy. The vomiting and retching that occur from excessive coughing is to be relieved by the anodyne that checks the cough; the more simple the anodyne the better; minute doses of morphia, if not contraindicated, are the best. The vomiting of exhaustion is controlled by stomachics, as quassia, or gentian in infusion; by stimulants, as champagne, brandy, and aromatic spirits of ammonia. Vomiting due to local irritation and congestion, caused by undigested and fermented food, is relieved by antifermentatives: carbolic acid, creasote, bismuth and charcoal; by artificial aids to digestion, by the use of peptonized or pancreatized foods; by alkalies, as iced lime-water, or Vichy water, which act as local sedatives; by carbonic acid water, the effects of which are sedative. The stimulating effect of a sinapism, or the sedative effect of a blister, must be invoked by their respective indications. It must not be forgotten that lying on the right side increases the tendency to vomit, lying on the other side having an opposite effect.

Pain in the epigastrium, a most common symptom from flatulency, from an irritated congested stomach, from a diaphragmatic pleurisy, is to be met by treating the respective causes. A gastric sedative, as subnitrate of silver in pill before meals, with a minute dose of opium, prevents the pain that ensues after food.

Diarrhœa, if colliquative, may be controlled by stimulants, as burnt brandy, ammonia, or camphor; if tubercular, by large doses of astringents. Bismuth, from thirty to sixty grains in each administration, has served the writer as well as any combination of drugs. Logwood is a most valuable astringent, the fluid extract being used most frequently.

Intestinal flatulency is often the cause of diarrhœa, and can be prevented by salicylic acid, by antifermentatives, and by pancreatin. The diarrhœa that follows immediately on taking food is treated by an opiate; preferably, deodorized tincture of opium in small doses, five to ten drops, or the powder one-twelfth of a grain, with silver or bismuth, before meals. A septic diarrhœa ensues also in the last stage, and is to be checked by salicylic acid, by naphthol, or other forms of the naphthaline series recently introduced into therapeutics. The diarrhœa of amyloid diseases can only be controlled by opiates.

To relieve the cough of the last stage is most difficult. Dryness of the upper air-passages is most distressing, and local applications are generally painful. By the aid of a mirror, suitable remedies, always demulcent in character, can be applied to the congested areas about the larynx and epiglottis. Glycerine applied with a brush relieves the dryness; Dobell's solution thus applied is of service. The applications must be made often to the dry areas. Listerine with glycerine is of much value. Inhalations of terebinthinated vapors, or of simple aqueous vapors, are most grateful. The simplest form of inhalation is the best. We frequently have generated the vapor in a sick cup, covering the top and inhaling by the mouth piece. The ineffectual efforts to cough can be aided by hot water, by hot water and brandy, and by the aromatic spirits of ammonia well diluted. Hydrocyanic acid has never been of any service in my hands for cough, while opiates are to be used with caution. A moderate dose of morphia may produce serious, even fatal symptoms. Codeia has disappointed the writer. Hyoscyamus and belladonna frequently add to the distress by producing dryness of the fauces; to relieve the dyspnœa, our utmost efforts are in demand. Ammonia, alcohol, Hoffmann's anodyne, and draughts of hot water are required in turn; external heat contributes to the relief. One of my professional friends says he has seen the air-hunger relieved by quebracho. Inhalations of oxygen should be theoretically of much service; the writer has never used them. The patient must be supplied with fresh, cool air, a source of relief to the distress. Attacks of dyspnœa, of course, are increased by flatulency, and this complication must be removed.

Hemorrhage in the last stage is usually profuse. A knowledge of the pathological anatomy of the lung at once shows the futility of astringents. Rest and opiates are essential, stimulants may be required; ice or cold cloths over the chest are imperatively demanded if it persists.

Laryngeal and faucial tuberculosis increases the distress of the patient. As long as feasible, cocaine

to render the taking of food possible must be applied to the ulcerated pharynx and larynx. Insufflations of morphia alone, or with iodoform and starch, must be practised, and over the larynx frequent fly blisters applied. One-eighth to one-quarter of a grain of morphia, with one grain of iodoform and three of starch, insufflated, or added to treacle and retained by the patient as long as possible in the larynx, gives much relief.

In the late stage of phthisis some means must be used, but not as imperatively as in the earliest stages, to combat fever. Quinine frequently aggravates nervousness, and is inadvisable. The salicylate of sodium, doses of five grains, guarded with a drachm of whiskey, every three hours, is a reliable antipyretic. It is also of much service after the manner of administration by Jaccoud. The general restlessness and nervousness which ensue at this period of phthisis must be prevented or allayed by quiet in the surroundings, by free access of pure air, by the administration of light liquid food only, and by the use of stimulating anodynes, preferably Hoffmann's anodyne; for a similar purpose, valerian and asafetida, by the mouth or rectum, or, if practicable, musk can be used; they are of much value. Gentle frictions allay restlessness, while ministrations with soft voice and gentle action allay an easily perturbed, nervous system. By means akin to these, we can truly administer to the sufferings of our patients. It is quite certain, however, that the firm voice, the truthful countenance, the inspiring touch, sustain and soothe in this trying passage through the valley of the shadow of death.

THE PRACTITIONER.

ON THE EARLY LOSS OF KNEE-JERK IN DIPHTHERIA.[1]

BY R. L. MACDONNELL, B.A., M.D.,

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Not long after the recognition of diphtheria as a distinct disease, it was observed that certain definite nervous symptoms made their appearance shortly after recovery, and one by one these were carefully studied until we soon came into possession of the knowledge of a certain definite group of nervous phenomena to which the comprehensive title of diphtheritic paralysis has been given. Of this group the most commonly observed symptoms, the paralysis of the veil of the palate, of the laryngeal, of the orbital and ocular muscles, and of the heart, have long been recognized, as well as sensory disorders of various kinds. Such nervous sequelæ occur after all the exanthems, but as very rare events, while so frequently do they follow diphtheria that it is no great exaggeration to say of a case that the non-occurrence of paralysis throws a shade of doubt upon the original diagnosis of diphtheria.

This frequent occurrence of post diphtheritic paralysis is a characteristic feature in those forms of the disease met with in Montreal. Of the eighteen severe cases on which the statements of this paper are based, the nervous system was to our knowledge distinctly attacked in 5, or 27.7 per cent., and of this number two died of sudden heart failure, and though the number of cases cited is small and scarcely sufficient to enable a just comparison to be made with the statistics furnished by others, yet the difference is remarkable when we consider that the proportion given by Roger is 17 per cent., by Sanné 11 per cent., and by Monckton 1.15 per cent.[1] Let it be remembered, however, that two great fallacies come into play, firstly, the diagnosis of the original disease—Was it real diphtheria?—and secondly, were the cases followed up after they left the hospital, the period in which diphtheritic paralysis was likely to develop.

Making all allowance, it is still evident that among hospital cases, in true diphtheria, paralysis is a much more common event than is generally supposed, and this has been made more evident by the observation of Dr. Buzzard in 1882, that Westphal's knee-jerk phenomenon was absent in that form of paralysis commonly called diphtheritic, and by the further observation of Bernhart (Virchow's *Archiv*, Bd. 99), that loss of knee jerk may precede the other symptoms, and may even occur without any other indication of nerve implication, in short, that absent knee-jerk may alone point to a preëxistent diphtheria, so that a diagnosis of tabes dorsalis might readily be made, especially if, as is, indeed, often the case, the eye symptoms from diphtheria happen also to be present.

The object of this paper is two-fold—firstly, to add some evidence in favor of Bernhart's observation, and secondly, to show that loss of knee-jerk occurs with the earliest symptoms of the disease itself, and coincident with the very first appearance of the throat affection.

The cases on which the following observations were made, were all hospital patients. To avoid possibility of doubtful diagnosis, all private cases have been excluded from consideration. Each hospital case was seen by medical men besides myself, and was considered of sufficient severity to be placed in the infectious block of the hospital, and these hospital cases were all my own. I did not borrow any from my colleagues. Then, again, of the cases admitted, three of doubtful diagnosis have been excluded. Thus, during the last six months eighteen cases have been under my care. Of these knee-jerk was absent on the day of admission in 10 and present in 8.

Loss of knee-jerk may precede other nervous phenomena, and be the means of enabling a diagnosis to be made of the nature of the previously existing throat affection. He is an illustration:

A boy, aged fourteen, previously strong and healthy, returned home from the country, where one of his young friends had died of a sore throat. There were at his home four children, three girls and a boy, aged eight to sixteen. On the day of his return the patient looked somewhat anæmic, and complained of feeling weak, owing to the effects of the quinsy he was reported to have had. There was a slight

[1] A paper read before the Canada Medical Association, August 31, 1887.

[1] Ross: Diseases of the Nervous System.

discharge from the nose, but nothing to point to the preëxistence of diphtheria but the absence of knee-reflexes. Isolation was attempted, but too late, and three of the four children took the disease. The patient eventually suffered from very great debility and regurgitation of food, the voice became nasal and recovery was long delayed. The knee-jerk did not become normal for four months. The sisters went to the hospital, where one died, the other two lost the knee-reflex immediately, and subsequently had diphtheritic paralysis.

Now, here was a case in which loss of knee jerk enabled a definite opinion to be formed as to the nature of the so-called quinsy. Such knowledge might be put to practical use in the prevention of infection, though it availed little in this particular instance.

The cases of the two sisters of this boy show that loss of knee-jerk may not only be the first evidence of diphtheritic paralysis, but that it may continue for a lengthened period as the only evidence of that condition. Both these girls, aged nine and sixteen respectively, took the disease immediately after the return of their brother, and both had very severe attacks of the throat affection. In June last, though both had well recovered, yet in both of them the knee-reflex was absent, no other nervous symptoms being present.

Knee jerk in many cases of diphtheria is absent from the very first day of the illness.

In ten of the eighteen cases the knee-jerk was absent on the day of admission to hospital. In the family above mentioned the two girls were admitted to hospital as private patients, in both knee-jerk was absent on admission, and in both paralysis occurred to a limited degree, in the elder one, aged sixteen, taking the form of general muscular debility, with regurgitation of food.

In the case of a French Canadian boy, of seventeen, admitted March 24, 1887, with severe pharyngeal diphtheria, knee-jerk was absent on admission. The three brothers of this patient had also had diphtheria, and in all three paralysis had occurred. Four months after admission, knee-jerk was still absent, and other paralytic symptoms had made their appearance.

It seems probable that early loss of knee-jerk usually indicates the advent of other paralytic symptoms. Thus, of the ten cases in which the knee-reflex was absent, two died, four developed nervous symptoms while in hospital, and of the remaining ones no satisfactory report could be obtained of their condition after they had left the hospital.

But of the eight patients whose knee-jerk was unaffected, paralysis appeared in one, two died, and of the rest no history could be obtained.

Of the causes of death of the two children with lost knee-jerk, one died from laryngeal implication, for which I opened the trachea, and the other of sudden heart failure at a time when other symptoms were abating, while the deaths amongst those with normal knee-reflex were due in both cases to spread of the false membrane to the larynx.

In one of the cases in which there was no loss of knee-jerk at the outset, and in which the growth of false membrane in the pharynx was very extensive, accompanied by very great swelling in the neck, the knee-jerk became lost in the third week of the illness; and at about this time great irregularity of the heart was noticed, and a systolic murmur at the apex was perceptible for some days. Regurgitation of food, loss of accommodation of the eye, and general debility followed. A week ago we were obliged to feed him with the stomach tube, death by starvation threatening on account of the paralysis of deglutition.

In two cases diphtheria was accompanied by a rash, knee-jerk was absent in both, and diphtheritic paralysis appeared in one.

Of two children, brother and sister, admitted on the one day, the brother died of severe laryngeal diphtheria, knee-jerk being present, the sister, in whom it was absent, lived several days free from laryngeal symptoms and doing well, but died suddenly of heart failure.

The conclusions, therefore, to which this observation leads us, are as follows:

1. In a considerable number of cases knee-jerk is lost from the first beginning of the disease, and thus affords a valuable means of diagnosis of the nature of the throat affection.

2. That loss of knee-jerk is the first evidence of the disease having attacked the nervous system.

3 Absent knee-jerk has no influence on the prognosis.

HORNY GROWTH OF THE PENIS—TWO MORE CASES.

By J. F. BALDWIN, M.D.,
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In the issue of The News of August 6, 1887, is an interesting report of a case of horn of the penis, by Dr. J. H. Brinton, with additional references to fifteen other cases—all he could find. I am able to add to his list two cases, one occurring in my own practice.

Case I.—E. J., aged nineteen, consulted me October 28, 1885, on account of epilepsy. I found he had a tight congenital phimosis, upon which I operated. At the time of the operation I noticed on the under surface of the removed portion of the foreskin, and also on the corresponding side of the glans penis, a soft warty growth, having a sabulous feel. I made no attempt to remove this growth, which I supposed was the result of lack of cleanliness and consequent irritation.

This wart rapidly developed into a veritable horn, and at the same time nearly the entire remaining surface of the glans penis became covered with two horny plates, which encroached seriously upon the meatus. January 5, 1886, I removed the horn, with a liberal slice of normal tissue at its base. The horn had then attained a length of nearly an inch. The cut healed by granulation, but the horn returned, and having by this time reached annoying proportions, was again removed, October 3, 1886. At this operation I thoroughly cauterized the seat of growth with acid nitrate of mercury, and there has been no return. The horny plates I removed at subsequent

operations using the caustic also as before, and the penis is now in good functional condition, though somewhat scarred.

The boy stated, and I have every reason to believe his statement, that he had never been exposed to any venereal disease. He had no return of his epileptic fits for several months after the circumcision.

CASE II.—The *Journal of Cutaneous and Venereal Diseases*, of about a year ago, contained a note, taken from the *Indian Med. Gazette* for January, 1886, of "a Hindoo, aged sixty, who had had gonorrhœa, followed by phimosis, fifteen years ago. Circumcision had been performed, in consequence of preputial irritation, eight months previously, and the growth had developed since then. There were two well-marked horny projections growing from the corona glandis, and the surface of the glans was covered with a cap of similar material. Amputation of the glans, including the growth, was performed with satisfactory result."

This case bears a striking resemblance to that of Dr. Binton, in age of patient, character of growth, and treatment instituted.

MEDICAL PROGRESS.

SOME POINTS IN THE TREATMENT OF TYPHOID FEVER.—BOUCHARD endeavors to secure intestinal antisepsis in typhoid fever by the administration of

Powdered vegetable charcoal .	100 parts.
Iodoform	1 part.
Naphthalin	5 parts.

which is to be mixed with 200 parts of glycerine and 50 parts peptone; this forms a semi-liquid black mass which is absorbed in twenty-four hours, of which a spoonful may be given in a third of a glass of water every two hours. The large intestine is to be cleansed morning and night by an enema of carbolized soap, 1 to 100, each enema containing $7\frac{1}{2}$ grains of carbolic acid in a pint of water. Baths are also given, their temperature being two degrees less than that of the patient at the time, reaching finally a temperature not below 86° F. Quinine is the antipyretic preferred. Free feeding is also a feature of the treatment. The results of the disease, under this treatment, have been a mortality of from 7 to 11 per cent.; the average duration of the disease being nineteen days.—*Revue de Thérapeutique*, September 15, 1887.

TUBERCULOUS PLEURO-PNEUMONIA; PNEUMOTOMY; RECOVERY.—CASINI reports, in the *Rivista Clin. e Therap.*, 1887, No. 1, the case of a man aged forty, whose family history showed that he had come from healthy parents; a brother had died of phthisis. The patient had ten years previously suffered from pleuro-pneumonia on the right side, and since then had complained of frequent pain in the right mammary region, with fever and cough with bloody expectoration. A leech had been applied over the painful spot, and after several days a small tumor formed at the point of application, which, when incised, gave exit to pus. On the day following this incision, fever and the expectoration of a muco-purulent secretion began. The phenomena increased in proportion as the discharge externally lessened; perspiration, emaciation, and diarrhœa were also present. Physical examination showed a cavity in the right mammary region extending from the third rib to the fifth intercostal space. The sputum contained abundant bacilli. CASINI considered from all the circumstances that fresh tuberculous infection was going on, and that it was imperative to open the cavity freely, and disinfect it.

Resection of the fifth rib was performed, and the cavity was thoroughly irrigated with solution of corrosive sublimate 1–1000, and sprinkled with iodoform. After the operation the expectoration lessened, became mucous in character after ten days, and in fifteen days the fever had entirely disappeared. Bacilli were not found in the sputum. The patient recovered, and was free from fever and cough.

Casini feels justified in drawing the following conclusions:

1. Surgical interference is justified when we have to do with a circumscribed tuberculous process, and a large cavity should be treated as a tuberculous cavity in bone.

2. Under certain conditions lung cavities have a tendency to localize tuberculosis, and when such foci are promptly destroyed general infection may be checked.

3. The depth of lung cavities is no counterindication against attacking them.

ERGOTIN AS AN ADJUVANT TO DIGITALIS.—ROSENBACH, in the *Berliner Klinische Wochenschrift*, No. 34, 1887, reports good results from the combination of these remedies in (1) aortic insufficiency; (2) in idiopathic dilatation of the heart, with alterations in the elasticity and contractile power of the bloodvessels; (3) in arterio-sclerosis.

He suggests the following formulæ:

R.—Inf. sec. cornu. . . . . ℥ss.
Æther, sulphur. . . . . ♏ 45.
Acid, hydrochlor. . . . . ♏ 15.
Aquæ . . . . . ℥iss.—M.
Sig. Teaspoonful every two or three hours.

Also

Ergotin. . . . . gr. 30 to 60.
Acet, digital. . . . . ♏.75.
Aquæ . . . . . ℥iss.—M.
Sig. Teaspoonful as indicated.

In pill form.

Ergotin. . . . . gr. 45.
Pulv. fol. digital. . . . . gr. 30
Pulv. et. ext. gentian. . . . q. s.
Ad. pil. 50 in num.
Sig. Dose, two or three pills.

Also

Infus. fol. digital. . . . ♏ 23.
Ergotin. . . . . gr. 30.
Aquæ. . . . . ℥iss.—M.
Sig. Teaspoonful every two hours if needed.

POINTS IN THE DIAGNOSIS OF CONSTITUTIONAL ENFEEBLEMENT AS A GUIDE TO THE REJECTION OF RECRUITS.—DUPONCHEL, Major and Surgeon in the French army, has found (*a*) that depression of the apex

of the heart below its normal level does not necessarily imply organic disease. It is frequently the result of defective development, and the hypertrophy so often occurring in these patients at adolescence.

(*b*) Prolonged expiration over the apices, especially the right, is not a sign of tuberculosis when unaccompanied by other characteristic signs.

(*c*) Isolated, or taken together, these signs are of value when combined with measurements of the body as indicating defective constitution which may justify the rejection of recruits.—*Archives de Médecine et de Pharmacie Militaires*, September, 1887.

A Capillary Catheter for Cases of Stricture and Retention.—Dr. Cousins describes the following instrument, used in aspirating a distended bladder, in the *British Medical Journal* of September 17, 1887:

During the last two years I have made an extensive trial of the capillary catheter, and I have used it with great satisfaction in many troublesome cases of stricture retention. Many of my friends have also communicated to me their successes, so that I am now able, from an extended experience, to recommend a trial of the method at the very onset of the treatment. The operation is painless, and generally requires no anæsthetic. The little instrument is perfectly flexible, and can be used with far more ease and safety than the small gum elastic or fine silver catheters which are usually employed by surgeons.

The capillary catheter is a compound contrivance, consisting of a filiform bougie and a fine catheter, very carefully prepared with woven web and gum-elastic, and possessing great flexibility and toughness, together with a smooth and highly polished surface. The combination is about eighteen inches in length, and it can be used for pneumatic aspiration by slipping over it an India rubber tube connected with a glass bottle, fitted with a two-way cork and a hand-ball air-exhauster.

The operation is readily performed in the following manner: After injecting the urethra with warm oil, and covering the patient with blankets, the penis is drawn forward with the left hand, and the catheter gently passed down to the stricture. As soon as its progress is arrested, it must be withdrawn two or three inches, rotated between the thumb and finger, and again twisted down upon the obstruction. During the repetition of these manipulations it often readily slips into the bladder; at the same time, its free and easy movement in the urethra, together with the sensations experienced by the patient, clearly indicate to the surgeon that the stricture has been overcome, and the catheter coaxed to move in the right direction. The discharge of a little urine now takes place, and the distended bladder is soon relieved, and the urethral spasm subsides. The urine now escapes in successive jets through the catheter, and this flow can be accelerated by fixing to its end the aspirating bottle and hand-ball exhauster.

The "Tin Dressing" for Leg Ulcers.—Dr. Watson, of Boston, describes a dressing devised by him as follows, in the *Boston Medical and Surgical Journal* of September 29, 1886: There is one principle in the treatment of chronic ulcers of the leg which he thought hastened the healing process materially. The analogy was seen in the freezing of a sheet of water. If the water were smooth the skimming of its surface with ice went on more rapidly than if it were thrown into an uneven surface by the wind. In the same way if the surface of the ulcer were made flat and smooth, the epithelium would extend across it more rapidly than if, like the rough water, its surface were occupied by granulations, and the open surface were above or below the level of the surrounding skin, as in the exuberant or indolent ulcer respectively. It had, therefore, been his practice in such cases as required it to secure this condition by the application of a shield of sheet-tin on top of the ulcer to bring the surface even with the surrounding tissues. The dressing was known at the City Hospital as the "Tin dressing," and it method of application was as follows: The ulcer and surrounding surface were soaked in corrosive sublimate, 1 part to 4000, and thoroughly cleaned; a bit of protective was then placed upon the surface of the ulcer, covering a little more surface than the ulcer actually occupied, protective or some substance having a perfectly smooth surface was used in order that the new epithelium, which shot in from the edges over night, so to speak, should not be pulled off by adhering, as it did to cheesecloth or compress or anything having a meshwork-woven surface. The tin made to fit the surface on which it was to lie is then placed on the protective, and the whole as well as the surrounding tissues covered with a dry corrosive sublimate gauze dressing, which was held in place by an evenly applied bandage extending from toes to knee.

Ulcers which had been lagging for days beforehand would often take a rapid start under this dressing.

A Hæmostatic Mixture.—Pavesi has prepared the following, which is especially useful in gynecological operations; it is efficient and unirritating:

Acid sulpho-carbolic . . .	25 parts.
Alcohol rectificat.	25 "
Acid benzoic	5 "
Acid tannic	5 "
Glycerin	125 "
Aquæ rosæ	200 "

For local use.

Sulpho-carbolic acid is made by mixing one part of sulphuric acid and a half part of carbolic acid, and heating a few moments over a water bath. The benzoic acid is dissolved in glycerine and alcohol, and the tannic acid in alcohol.—*Gazette de Gynécologie*, August 1, 1887.

Cocaine Poisoning.—Schnyder reports the case of a druggist who for the relief of headache took three-quarters of a grain of cocaine and repeated it in three-quarters of an hour. Anæsthesia of the extremities and labored respiration followed, for which he took twenty drops of tinct. nucis vomicæ. Half an hour afterward spasms; cold extremities; motionless, somewhat dilated pupils; a pulse of 150, with weakened heart action and delirium supervened. Strong coffee and warmth, with stimulant inhalations, somewhat restored him; respiration became more free and the pulse became 120. For severe pains in the head cold applications and mustard leaves over the chest were applied. In four hours after taking the drug the pulse had become 80, but the patient

could not sleep.—*Corr. Blatt f. Schweizer Aerzte*, No. 15, 1887.

THE TREATMENT OF THE CERVIX UTERI WITH NITRATE OF LEAD.—CHÉRON has employed this substance as follows:

Plumbi nitrat.	1 part.
Lycopodii	2 parts.

The parts are first cleansed by cotton and glycerine, and the powder insufflated upon the diseased surface. —*Revue de Therapeutique*, August 1, 1887.

A NEW METHOD OF INHALING NITRATE OF SILVER FOR DISEASES OF THE AIR PASSAGES.—The *Journal of Laryngology* for September, 1887, thus concludes its investigations of this mode of treatment, which has been extensively used in Sweden and Denmark.

On reviewing the advantages and disadvantages of the method of inhaling nitrate of silver, as introduced and practised by Scandinavian investigators, its great use in the treatment of chronic bronchitis and of emphysema seems so evident, and its drawbacks so slight, if but caution is observed, that it deserves a fair trial by other practitioners. As a treatment for diseases of the upper air passages, we hardly think it has any advantage over the methods previously known.

For those who should adopt the inhalations on the principles above described, we recommend the following plan as the most simple and practical. In the middle of a small room is placed, on a low table, a small Berlin crucible or evaporating pan, containing one part of nitrate of silver and three parts of ammoniac nitrate, and under the cup is placed a spirit lamp, which heats it very slowly. The patients, who are sitting around the table, need not protect their faces, but linen or white clothing should be covered. Each inhalation ought not to last longer than thirty to forty-five minutes, and the treatment should not be extended over too lengthy a period.

CHYLOUS CYST OF THE MESENTERY.—BRAMANN reports in the *Archiv f. klin. Chirurgie*, Bd. 35, an interesting case which occurred in Von Bergmann's clinic at Berlin, in which laparotomy was performed for a cyst, as large as a child's head, in the mesentery of the small intestine, which contained a clear chylous fluid. The cyst probably resulted from the occlusion and dilatation of the thoracic duct or some other lymph channel. The cyst was opened, emptied, and its edges stitched to the abdominal wall; its total excision was impossible on account of the danger of intestinal gangrene from the severed mesentery.

ACETPHENETIDIN, A NEW ANTIPYRETIC.—KOBLER concludes from his study of this drug that it is an efficient antipyretic, the use of which is not followed by inconvenient symptoms. It is given in doses of eight, nine, or ten grains; one such dose being more useful than smaller, repeated doses.—*Wiener medicinische Wochenschrift*, No. 26 u. 27, 1887.

ANTISEPTIC CIGARETTES. — DR. MACNAUGHTON JONES describes in the *British Medical Journal*, of September 3, 1887, the following antiseptic cigarettes, which he has used successfully in diseases of the pharynx and nares: 1. Containing eucalyptus and iodoform disguised with vanillin. 2. Eucalyptus with iodo-salicylic acid. 3. Coltsfoot with eucalyptus and iodoform disguised with vanillin. 4. Tobacco, eucalyptus and iodoform disguised with coffee. Each cigarette contains one grain of the active ingredient. I may mention that the iodo-salicylic acid has not the unpleasant odor of iodoform and other iodine compounds, while it is quite as effective on the lower forms of life; under combustion, iodine is evolved. All the cigarettes will be found pleasant to smoke, and the odor of the iodoform well disguised, whilst its presence in the nasopharynx for some time after the cigarette is used may be detected by its taste. Those made with tobacco, eucalyptus, iodoform, and coffee are particularly agreeable, and the odor is thoroughly disguised. So, indeed, is it with those made with vanillin and coumarin, yielding an aromatic vapor which is pleasant rather than otherwise.

A USEFUL APPLICATION FOR PRURITUS OF THE VULVA.—VERRIER advises the following lotion, which may be used by saturated tampons in obstinate cases:

Acid. carbolic. solut. . . .	1 part.
Morphiæ acetat.	½ "
Acid. hydrocyanic. dil. . . .	6 parts.
Glycerin	20 "
Aquæ	240 "

—*Gazette de Gynécologie*, August 1, 1887.

PNEUMOTOMY.—GUERMONPREZ, of Lille, reported recently to the Paris Academy of Medicine the case of a patient who had suffered for four years with persistent vomiting, for which three operations had been done: 1. The exploratory incision of the pleura. 2. Two months afterward the removal of portions of two of the ribs. 3. Multiple puncture of the lung, and a superficial pneumotomy; eight months later a deep pneumotomy was made, followed by intrapulmonary injections to liberate inaccessible and retained secretions.

From this, and allied cases, the conclusions are drawn that 1st. Exploratory incision of the pleura is not a dangerous operation. 2d. When the fetid odor of matter vomited causes a diagnosis of a suppurative centre, the incision of the parenchyma must be deep enough to reach this centre, even if it be carried through healthy tissues. 3d. If two foci which communicate with difficulty are found, they may be stimulated to healing by injections of warm, stimulating materials, which will facilitate their evacuation by the incision through the thoracic wall. 4th. When performed under proper conditions, pneumotomy is a justifiable operation, whose results should be good.—*Gazette Hebdomadaire*, September 2, 1887.

CONCLUSIONS REGARDING THE VALUE OF INOCULATION AGAINST ANTHRAX.—At the International Congress of Hygiene, recently held at Vienna, the statistics of 260,000 sheep and 29,000 cattle which had been inoculated in France in five years time, were reported, and a thorough discussion of Pasteur's method followed. The conclusion reached by Koch and others was that the utility of the method was not yet proven, and the personal report of Pasteur, whose ill-health had prevented his presence, was desired to appreciate properly the results of his treatment for anthrax.—*Deutsche medicinische Wochenschrift*, September 8, 1887.

Chemical Tests for Bacilli. — The diagnostic value of Koch's cholera bacillus having been considerably impaired by the proved existence of other microorganisms of like morphological characters, the discovery by Pohl, Brieger, and others, of a chemical reaction alleged to be peculiar to cultures of the comma bacillus was welcomed as an additional test of importance. This reaction consists in the development of a red color (*cholera-roth*) on the addition of hydrochloric acid to the cultures, and, as Brieger has shown, the color depends upon the presence of a ptomaine containing derivatives of indol. We now learn from the experiments of Ali-Cohen, of the Hygienic Institute of Groningen (*Fortschritte der Medicin*, No. 17), that the reaction is not peculiar to the comma bacillus, and that it may be obtained by the use of any mineral acid that contains the impurity of nitrous acid, for the pure acids do not produce it. The indol derivative is produced by Koch's bacillus somewhat more rapidly than it is by other morphologically identical forms; but then there are bacteria not morphologically allied to the comma bacillus which can produce this substance quite as readily. The discovery of the *cholera-roth* is thus shorn of its diagnostic value, and reliance must still be placed upon bacteriological methods for differentiating the cholera organism.—*Lancet*, September 17, 1887.

The Treatment of Lupus.—Kaposi, of Vienna, considers no remedy specific against lupus; excision of diseased tissues he regards as most often successful. His favorite applications are

Zinc. chlorid.,	
Antimon. chlorid.	āā ʒ 2½.
Irid. Florent. pulv.	gr. 75.
Acid. hydrochloric. con.	ɱ 75.

This paste may be left in place twenty-four hours. Kaposi also employs Hebra's arsenical paste:

Arsen. alb.	gr. 15.
Hydrarg. sulph. rubri	gr. 45.
Ung. emoll.	ʒ 6.

This paste is generally allowed to remain in contact with the tissues twenty-four hours.

Pyrogallic acid may be used, in combination with ung. emol., one to ten. This is left twenty-four hours in contact with diseased tissue. Also

Iodini pur.	gr. 75.
Tinct. iodin.	ɱ. 74.
Glycerin.	ʒ 2½.

may be applied. In surgical instruments Kaposi prefers Vidal's spoon-curette.—*Allg. Wien. Med. Zeitung*, Nos. 24 and 26, 1887.

The Causes of Malignant Tumors. — Rappin concludes a series of studies upon this subject as follows:

1. There exist in carcinomata, sarcomata, and some of the benign tumors micrococci whose presence may be demonstrated by coloring fluids.

2. Cultures made of the tissues of these tumors produce a diplococcus which persists unchanged.

3. In its morphology this diplococcus resembles the bacteria of suppuration; inoculation of pure cultures of this bacteria in animals produces effects similar to the tissues from which the germs were taken.

4. Particles of normal tissues, when taken with all possible precautions against contamination, when brought in contact with appropriate nutritive media, give birth to bacteria.

5. From a therapeutic stand-point interstitial antiseptic injections are indicated; and also the determination, if possible, of the cause of these growths, and its antidote.—*Gazette Médicale de Nantes*, September 9, 1887.

Tubercle Bacilli and Flies.—In a communication made to the Académie des Sciences by MM. Spillman and Haushalter, and recorded in *La Semaine Médicale*, the question of the spread of the tubercle bacillus by means of the common house-fly is considered. The authors state that they have seen flies enter the spittoons containing the sputum of phthisical patients: they were then caught and placed in a bell jar. On the following day several of these were dead. Examination of the abdominal contents and the excrement of these flies on the inside of the jar showed the presence of many tubercle bacilli. The authors point out the wide dissemination of the disease which may take place in this way, and recommend as a preventive the employment of covers with a small opening.—*Lancet*, September 10, 1887.

The Treatment of Erysipelas Complicating Surgical Affections.—Among the numerous applications used in the local treatment of surgical erysipelas, Rothe advises an antiseptic liquid as follows:

Acid. carbolic.	gr. 7½.
Alcohol (50 per cent.)	gtt. 15.
Essent. terebinth.	ʒ 3¾.
Tinct. iodin.	gtt. 15.
Glycerin.	ʒ 3¾.

Fraipont and Van Winiwarter immerse the affected part for ten or fifteen minutes in a bath of warm bichloride of mercury solution, 1 to 2000. The part is then wrapped in iodoform gauze, and enveloped with a bandage material moistened in Burow's fluid, which, as prepared by Billroth, is

Alum	1 part.
Plumbi acetat	5 parts.
Aquæ	100 "

An impervious protective is placed over all.

On the following morning the epidermis will be found macerated; superficial diseased tissues will come away, and the part may be cleansed with material dipped in sublimate solution 1 to 2000, and then dressed antiseptically.—*Revue Générale de Clinique et de Thérapeutique*, September 15, 1887.

Salix Niger and Strophanthus in Genito-urinary Disease.—Mr. Fenwick, of the London Hospital, has found, in testing a number of new drugs, that those mentioned above are useful as follows:

Salix Niger (Black Willow).—A sexual sedative of decided value; useful in ovarian hyperæsthesia, also in prostatorrhœa, spermatorrhœa, excessive seminal emissions, and enforced continence. In the latter disorders

its action is good, but inferior to potassium bromide. This is, however, somewhat counterbalanced by its non-depressant qualities. Dose, ½ dr. to 1 dr. Finding it of value in those wearisome cases of urethral neuralgias, following gonorrhœa, I began to substitute soda salicylate for it. I was impressed by the relief this latter afforded. In cases of urethral pain in the adult, I first eliminate stone, stricture, urethral granulations, and over-acid urine, and then prescribe soda salicylate 7.5 gr. to 3ss in a gratifying result.

Strophanthus.—Kombé.—I believe there is a distinct future before caffeine, digitaline, and strophanthus as adjuvants to operations on the vesico-urethral tract. We have sometimes to deal with partial or complete temporary suppression, and sometimes with rigors after operative interference or even instrumentation. Caffeine seems indicated to avert the former; strophanthus the latter. Again, if we have reason to anticipate sudden flooding of the renal vessels and consequent urinary fever as the result of an operation, then digitaline, from its power of controlling the renal circulation, is indicated. Our treatment, however, on these lines must go *pari passu* with our oncometric knowledge of drugs which affect the kidney circulation or the abdominal blood pressure. I believe strophanthus has power, worthy of further investigation, in controlling rigors. I employed it on the theoretical grounds that it increases cardiac power and general blood pressure. Five in-patients suffering from violent rigors after instrumentation we treated with the tincture in doses of 5 m. after catheterization. In no in-stance were rigors induced.—*Lancet*, September 24, 1887.

A Rare Cyst; Extirpation; Recovery.—Weil is quoted by the *Centralblatt fur Chirurgie* of September 24, 1887, in his report of a congenital cystic hygroma of the right supraclavicular region, occurring in a child eleven months old, which was successfully extirpated. The cyst was multilocular, part containing blood, and part lymph; it lay close to the jugular and subclavian veins, but did not communicate with them.

Gunther and von Koch have reported blood cysts communicating with the jugular vein, but the cyst in the present instance was unique.

Recent Formulæ for Salol.—Nicot, Vuillet, and other French observers, have found the following formulæ useful:

Saccharl. lactis	4 parts.
Salol	1 part.

The ordinary dose of salol is fifteen grains in this combination.

Salol may be made into tablets after the following formula:

Gummi tragacanth.	gr. 15.
Gummi arab.	gr. 45.
Aquæ	ʒ 2½.
Salol	ʒ 6¼.
Saccharl. alb.	ʒ 15
Essent. citron.	gtt. 5.

The dose of salol mentioned (fifteen grains) will be obtained by dividing this mixture into twenty-five lozenges or tablets.

Equal parts of salol and powdered starch have been used with advantage, applied to ulcerations of the cervix uteri and vagina.

Salol may be combined with collodion, as follows:

Salol,	
Ether	āā 4 parts.
Dissolve, and add	
Flexible collodion	30 parts.

An oleate of salol has been found useful for troubles of the external portions of the eye. A pomade, salol ʒj to ʒvijss of vaseline, may be employed.

For burns:

Ol. oliv.	6 parts.
Salol	1 part.
Aquæ calcis	6 parts.

In suppositories:

Salol	ʒ 2½.
Ceræ alb.	gr. 53.
Ol. theobrom.	ʒ 10.

For ten suppositories.—*Revue Générale de Clinique et de Thérapeutique*, September 22, 1887.

Oatmeal and Lard for Burns.—Dr. Greene reports in the *British Medical Journal* of September 24 1887, his use of these simple but efficient remedies, as follows:

I have for some time been in the habit of using for all degrees of these injuries equal parts of fresh lard (that is, free from salt) and oaten flour made into a paste, which, when spread on a cloth (old calico), or, preferably, a piece of lint, I direct to be applied or rolled round the affected part or limb, and allowed to remain on for twenty-four hours, after which a fresh application is made, and so on every twenty-four or forty-eight hours, as the exigencies of the case demand. In every instance I was well pleased with the progress of cases subjected to this treatment, several of which had been ineffectually treated by other methods. The advantages which I claim for this application are: (1) its freedom from odor, (2) its soothing properties and antiseptic action, (3) its superior healing powers, and, lastly, its cheapness and the ease with which it can be procured (in most houses) on the shortest notice. This latter advantage is of no small importance, taking into consideration the sudden and frequent occurrence of injuries of this nature in everyday domestic life.

Atropia and Strychnia for Sea Sickness.—The following prescription is taken from the *Revue Scientifique* of September 24, 1887, as having been originally published by a naval surgeon in *La Semaine Medicale*:

R.—Atropiæ sulph.,	
Strychniæ sulph.	aa gr. ½.
Aquæ menth. piper. . . .	ʒ 10.

Sig. Dose, 15 minims, hypodermatically; may be repeated in two hours.

For a child two years old, one-sixth of this dose may be given. Caffeine, in 5 grain doses, or combined with atrophia and cocaine, may also be used to advantage.

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SATURDAY, OCTOBER 15, 1887.

THE HEALTH OF THE CROWN PRINCE.

IN view of the alarming reports as to the recurrence of the growth in the Crown Prince's larynx, and of its undoubted cancerous nature, which during the week have appeared in the daily press, the following cable just received from Sir Morell Mackenzie by THE MEDICAL NEWS is of interest:

"The Crown Prince is free from recurrence of the laryngeal growth. A chronic inflammation remains, with a disposition to subacute catarrh on slight exposure, or after much talking."

In the light of this authoritative statement there exists no reason to alter the view already expressed as to the non-cancerous nature of the growth. The Prince, however, seems to have suffered from an attack of acute inflammation of the windpipe, and in case of recurrence, to which he appears liable, this might lead to changes in the deeper tissues. Should stricture ensue the complication would be serious, despite malignancy.

THE CHOLERA AT NEW YORK QUARANTINE.

THE cholera brought from the city of Naples to the port of New York by the steamer "Alesia" on the 23d of September and, on that date, transferred, with the steerage immigrants and their effects, to Hoffman and Swinburne Islands, still prevails there with apparently unabated virulence. As yet, no cases have occurred on the mainland, but the danger with which the arrival of the "Alesia" confronted our chief metropolis and maritime port is as threatening to-day as on the 23d of September.

The unexpected continuance of cholera among the quarantined immigrants, so long after the enforcement of measures which had been devised for its prompt suppression, and the increasing public anxiety lest the disease in some way pass the barriers which have been erected against it and invade the mainland, would seem to call for an inquiry as to whether all has been done by the authorities that present knowledge and experience require to be done in order, beyond peradventure, to secure a speedy arrest of the disease among the immigrants and protect the country from the disasters of an epidemic. The standard by which we must gauge the measures which have been enforced in the present emergency, should be sufficiently extensive to cover at least all the known avenues of attack.

Measures of prevention, to give the greatest possible guarantee of success in extinguishing an incipient epidemic of cholera, should, in the first place, be based upon the most exact knowledge we possess of the cause, mode of attack, and manner of spread of the disease; and, in the second place, these measures should be intelligently, thoroughly, and rigidly enforced.

What are the considerations involved in the first category? Probably nine-tenths of intelligent and experienced physicians all over the world, even including those of India, have for years admitted that there is most convincing proof that the active cause of the disease is a specific, material, living entity, of extremely minute size, endowed with the power of self-propagation, and of exceedingly rapid multiplication in enormous numbers; that among animals it naturally attacks man alone, assailing him only by way of the intestinal canal; that the evacuations from the bowels contain the active cause of the disease, and that when this agent in any manner—as through drinking water, milk, food, or the handling or washing of contaminated personal effects, etc.—reaches the intestines of another susceptible person, the disease may be thereby transmitted from the sick to the healthy; that the active agent exists in the dejecta of the lightest and almost imperceptible no less than in the severest and most deadly forms of the disease, and is known to be transportable from place to place through the movements of man and his personal effects.

Proceeding from this basis, logical deduction and common experience alike demonstrate the absolute necessity and efficiency of such measures of prevention as the following:

a. Speedy recognition and isolation of the sick; their proper treatment; absolute and rapid destruction of the infectious agent of the disease not only in the dejecta and vomit, but also in clothing, bedding, and in or upon whatever else it finds a resting place.

b. The convalescents should remain isolated from the healthy so long as their stools possibly contain any of the infecting agent; before mingling again

with the well they should be immersed in a disinfecting bath, and afterward be clothed from the skin outward with perfectly clean vestments, which cannot possibly contain any of the infectious material.

c. The dead should be well wrapped in cloth thoroughly saturated in a solution of corrosive sublimate, 1 to 500, and without delay, cortège, or lengthy ceremonials, buried near the place of death in a deep grave remote as possible from water which may, under any circumstances, be used for drinking, washing, culinary, or other domestic purposes. (Cremation, of course, is by far the safest method of disposing of cholera cadavers.)

d. Those handling the sick or the dead should be careful to disinfect their hands and soiled clothing at once, and especially before touching articles of food, drinking, or culinary vessels.

e. In the case of maritime quarantine, the well should be disembarked and placed under observation in quarters spacious enough to avoid crowding, and so well appointed and furnished that none will suffer real hardships.

f. Once having reached the station, those under observation should be separated in groups of not more than twelve to twenty-four, and the various groups should under no pretext intermingle; the quarters for each group should afford stationary lavatories and water-closets in perfect working condition, adequate to the needs of the individuals constituting the group, and supplied with proper means of disinfection; there should be a bed raised above the floor, proper coverings, and a chair for each member of the group, each person being required to use only his own bed; there should be a common table of sufficient size to seat around it all of the members of the group, who should be served their meals from a central kitchen, and with table-furniture belonging to the station and cleaned by the common kitchen scullions.

g. Drinking water, free from possible contamination and of the best quality, should be distributed in the quarters of each group, as it is needed, and *in such a manner that it is received in drinking cups only*: there should be no water buckets or other large vessels in which handkerchiefs, small vestments, children's diapers, etc., can be washed by the members of any group.

h. Immediately after being separated into groups in their respective quarters, every person under observation should be obliged to strip and get into a bath—a disinfecting one is preferable; and afterward be clothed with fresh, clean vestments from the skin outward; every article of clothing previously worn should be taken away and properly disinfected.

i. Then all of the personal effects should be at once removed to a separate building, washed, if possible, and thoroughly disinfected, or, if necessary, destroyed; after disinfection they should be temporarily returned to the members of groups, when occasion requires a further change of clothing.

k. Under no circumstances whatever should washing of clothing by those under observation be permitted; all used clothing should be first thoroughly disinfected (by boiling when possible) and then should be cleansed, the disinfection and washing being done by a sufficiently trained and absolutely reliable corps of employés supplied with adequate appliances.

l. All of those under observation should be mustered in their own quarters and be subjected to a close medical inspection, while on their feet, at least twice every day, in order to discover and isolate as soon as possible new cases which may develop, and, of course, the clothing and bedding of these new cases should be treated without delay in the manner already mentioned; in the meantime a watch should be set over the water-closet, for the purpose of discovering cases of diarrhœa, and when discovered, such cases should be temporarily separated from the rest, they should receive judicious medical attention at once, and precautions should be taken as if they were undoubted, but mild cases of cholera.

m. The quarters should be kept thoroughly clean, and every surface upon which infectious material could possibly be deposited, including the floors, should be washed with a strong disinfectant twice daily and oftener when necessary; evacuations from the bowels should be passed into a strong disinfectant, the hopper of the closet should be then flushed and finally drenched with a quantity of the same disinfectant.

n. For the proper attention to the sick there should be two or more competent and experienced physicians, assisted by a sufficient corps of intelligent and efficient nurses, with hours of duty so arranged that a physician with a sufficient number of nurses be in constant attendance in the wards of the hospital.

o. For the prompt recognition and separation of new cases, their temporary medical attention, the proper treatment of discovered cases of diarrhœa or cholerine, and of other maladies, and the immediate correction of every insanitary practice or condition by constant, vigilant, and intelligent supervision, there should be at least two or more competent and experienced physicians with hours of service so arranged that a physician is on duty night and day among those under observation; and he should have subject to his orders, at any and every moment, a sufficient and efficient corps of nurses and laborers to carry out properly and promptly his directions.

p. In order to prevent the intermingling of the various groups, to enforce obedience, and order,

and to make it absolutely impossible for the quarantined and their personal effects to have any communication with the exterior, a well organized and sufficiently large police corps should patrol the borders of the stations and the buildings, day and night.

q. Any group among whom there has developed no new case of cholera or of choleraic diarrhœa during the preceding eight or ten days may be regarded as harmless and be allowed to leave quarantine after each one is finally immersed in a disinfecting bath, and reclothed with clean garments from the skin outward; the garments removed being destroyed or thoroughly disinfected and cleaned as above indicated.

As yet no reference has been made to the crew, ship, and cargo. What has been said of the treatment of those under observation applies to every one of the ship's inhabitants. The observation, isolation, and cleansing of the crew and their effects could safely be performed aboard ship, if necessary. The ship should be thoroughly cleansed and disinfected, particular attention being given to the quarters of the immigrants and crew.

By the adoption and quick enforcement of all the above-indicated measures of prevention, New York and the country at large, without doubt, would, at the present time, be safe from the spread of cholera beyond quarantine, and, moreover, the disease would probably not even spread among the immigrants under observation.

But, how closely do the preventive measures enforced at the New York quarantine during this critical period come up to the standard we have cited? We regret that our duty to the public requires us to declare that they fall far short of it, and that, from what we can learn, they should be characterized as in many respects dangerously lax.

We have reason to believe that there is no constant medical attention and supervision at either Swinburne or Hoffman Island, and that the force provided for guarding the approaches to these stations is quite insufficient to guarantee absolute isolation from the mainland. We are informed that the washing of clothing is promiscuous, takes place around the open mouths of sunken cisterns, and that the water in the latter is accessible to the immigrants, if, in disobedience of orders, they chose to drink it.

We do not pretend to say where the responsibility for this state of affairs rests, but in view of the almost uncontrollable tendency of cholera to spread at times, it seems that there is much to be improved in the management and laws of quarantine, even in the Port of New York, which has heretofore, in this country, been regarded as a model. It is to be hoped that the report of the Committee appointed by the College of Physicians of Philadelphia, to investigate our quarantine safeguards, will have some effect not only in causing a prompt lessening of the danger which at present threatens the country through the Port of New York, but will ultimately contribute greatly to a general reform in our management of quarantine.

AMYL HYDRATE.

We have already called attention to the use of this comparatively new drug for the production of sleep and to quiet nervousness; the first reference made to it in these columns being taken from the *Therapeutische Monatshefte* for July, 1887. In the same journal for September, 1887, is a second paper by Dr. Scharschmidt, even more full in its accounts than the first, which records experiments not only as to its hypnotic powers, but also as to the time required for its absorption, its effect on the pulse and the general system. The drug can be given in the form of a clyster, or by the stomach in cognac or red wine and sugar.

The same writer also gives the results of its use in one thousand and fifty-one cases, for the production of sleep.

In eight hundred and sixty-nine cases the results are classed as good, in one hundred and thirty-eight they were medium, and in the remainder no effect was noted. The doses given ranged from 23 grains to 75 grains, the larger proportion receiving from to 45 to 60 grains.

The medical school of McGill University opened its classes on Monday, October 3d, with an introductory lecture by Sir James Grant, M.D., K.C.M.G. The eloquent lecturer dwelt on the importance of a good preliminary education before entering upon the study of medicine, and drew attention to the clinical advantages afforded to students in the McGill medical school. He also spoke of the importance of a knowledge of sanitary science, and the relation of disease to locality, and food supply. After giving some sound advice to the students, and especially to those now for the first time attending the medical classes, he thanked the faculty for affording him this opportunity of addressing the students.

In the evening Sir James Grant was given a complimentary dinner at the St. James's Club by the McGill medical faculty in recognition of the honor of knighthood recently conferred upon him by Her Majesty. Sir James is the first medical man in Canada who has been knighted.

Sir Robert Ball, Astronomer Royal of Ireland, recently gave a very eloquent and instructive lecture to the students of the University, the subject being the "Earth and the Moon." He explained how the moon caused the tides and how the days were continually growing longer, owing to the diminished

speed with which the earth revolves. This diminution, however, only amounts to a fraction of a second in a thousand years, so it need not trouble the present generation greatly.

THE U. S. Marine-Hospital Service reports yellow fever as prevailing at Tampa, Florida, and twenty cases and four deaths were noted up to October 7th. On October 10th six new cases and one death were reported.

THE epidemic of scarlet fever in London continues to spread, and there are now 1900 cases in the hospitals.

THE death of Dr. James A. Gray, managing editor of the *Atlanta Medical and Surgical Journal*, is announced.

SPECIAL ARTICLE.

THE YELLOW FEVER EPIDEMIC AT TAMPA.

So far as can be judged from the testimony presented, the disease now prevailing at Tampa seems to be yellow fever, and the panic that prevails in that portion of Florida is not altogether without justification. The positive statements of Dr. Wall, the Health Officer, whose long residence at Tampa, and whose experience in cases of yellow fever fairly entitle him to judge, should weigh much more than the dicta of interested laymen, each more anxious to prevent the stampede, and consequent commercial losses, than to tell the truth. The fatal progress of the disease tells its own story, and prevents adhesion to the theory that the disease is dengue and not yellow fever.

For the arrest of the progress of the disease, and the prevention of its spread, the experience of the last decade has conclusively established the utility of the measures of *isolation* and *segregation*, in conjunction with those public measures always needful in times of epidemic, namely, *municipal cleanliness, careful quarantine*, and *special hospitals*.

We have repeatedly seen examples in the United States of the calamitous results of the neglect to isolate the first cases, and, indeed, to the neglect of this precaution alone, we may attribute some of our most disastrous epidemics. Isolation means something more than the separation of the individual, while ill from the fever. It also includes the surveillance of all fomites, the attendants upon the sick, and really includes the disinfection of the premises, for no patient while suffering from a contagious disease can be said to be properly isolated unless the atmosphere about him be rendered practically aseptic, and contact with transportable fomites absolutely prevented. The immediate removal of the yellow fever patients from Jasper Rand's wharf at the foot of Palafox Street, in Pensacola, on the night of the 22d of August, 1883, probably prevented an epidemic in that city in that year; for, although the disease was then prevalent at the Navy Yard, from which the city was separated by a rigid *cordon sanitaire*, and the local conditions were undoubtedly favorable to the development and spread of the disease, no further cases were reported.

The occurrence of several cases at Tampa, in portions of the city remote from each other, at this time, prevents the carrying out of this measure.

The fears of the populace and, as well, the experience of the past, act as powerful incentives to segregate the well from the sick; and thus the material for the propagation and development of any epidemic is sensibly reduced, and yellow fever is one epidemic disease easily managed in this way, when the people cheerfully obey the sanitary authorities.

In order that the well may scatter themselves far from the original centre of infection, with safety to those living at the place of refuge, those now usual measures of land quarantine are absolutely essential. At the line of the *cordon sanitaire*, the refuge camp is established, and care taken that no fomites are carried beyond.

It is because of a lack of confidence in the efficiency of the guards, that the *cordon sanitaire* has so unjustly been derided; but there are guards the world over that do not guard, nevertheless, policemen cannot be dispensed with because of the possible unfaithfulness of a few. But it is certain that American quarantine guards are among the most faithful of mankind. The courage and devotion of the guards under Murray and Spohn, during the Brownsville (Texas) epidemic of 1882, and the faithful watchfulness of the Pensacola guardsmen under Captain Guttman, are plain proofs that an extended guard line can be maintained for long periods, successfully. Every effort, however, should be made to diminish the number of people subject to its operation, by hastening the formation of camps of refuge, as soon as isolation of the cases is no longer practicable.

Conjointly with these measures, municipal hygienic rules should be rigidly enforced, and care taken that when the refugees return, they shall return to a clean and regenerated city. If it were possible to destroy by fire every textile fabric in the sick room, it would be justifiable on sanitary grounds, although the milder measure of soaking them in disinfecting solutions, seems to have successfully prevented the spread of cholera in Paris at the time of its recent invasion.

In regard to special fever hospitals, there can be no question that they serve a useful and humane purpose; the patients can be more easily and cheaply provided for, the difficulty of obtaining nurses is obviated, the skill of an experienced resident physician may be secured, and modern hygiene may easily prevent such a hospital from becoming in itself a centre of infection.

JOHN B. HAMILTON.

WASHINGTON, October 12, 1887.

REVIEWS.

Students' Guide to Diseases of the Eye. By Edward Nettleship, F.R.C.S., Ophthalmic Surgeon to St. Thomas's Hospital, etc. With a chapter on Examination for Color Perception. By William Thomson, M.D., Professor of Ophthalmology in Jefferson Medical College. Royal 12mo. pp. 475, with 165 illustrations. Philadelphia: Lea Brothers & Co., 1887.

It is with books, as with men, that some age faster than others. The early symptoms of senility include, a cessation of increase in bulk; defective assimilation of new materials, causing them to appear as foot-notes, and interjected paragraphs; imperfect elimination of outgrown theories, and over-worked woodcuts; and a general rigidity of the plates, preventing the normal infusion of new ideas into the body of text. In the work before us such symptoms are conspicuously absent, and if Mr. Nettleship's book be not immortal, it at least presents that semblance of immortality which healthy, vigorous life always exhibits.

For the seven years since it first appeared, it has to show more than one hundred pages of new matter; which reflect, not only the progress of ophthalmic science and art, but, as well, the growth and maturing of the author's mind. For not only has new matter been added, but the original text has been truly revised, paragraphs of minor importance stricken out, imperfect articles rewritten, and whole chapters rearranged, so that the book, instead of becoming overloaded with undigested accretions, has improved in arrangement and unity as much as it has increased in bulk. Even of the eighty-nine cuts that appeared in the first edition, twenty per cent. have been replaced by new ones better illustrating the subject. Among the cuts that are entirely new we notice as of especial practical interest one giving seven illustrations of various deformities of the teeth from inherited syphilis and other causes.

Part third, dealing with "diseases of the eye in relation to general diseases" has shared fully in the recent additions, and should be of interest to every general practitioner, as giving the eye-symptoms and eye-complications of those general affections he has constantly to deal with. And the appendix, giving now some eleven pages of formulæ with remarks as to their use, cannot fail to strike the "practical" physician very favorably.

We notice among these formulæ, four grains to the fluid-ounce set down as the proper strength for the solution of homatropine; and the same proportion given for the solution of eserine. In the case of the former, its mydriatic power will be imperfectly developed, a twelve-grain solution, or even stronger, being on all accounts preferable; while the latter, if "used in mydriasis and paralysis of accommodation, whether caused by atropine or by nerve lesions," will be liable to cause, in many cases intense neuralgic pain from cramp of the ciliary muscle. In view of this, the subsequent remark, "a weaker solution (gr. j to ℥j) is often better borne," might well have been italicized.

Among the useful additions made in the present edition, we notice a table giving the shortening of the eye-ball in various degrees of hyperopia and its lengthening in myopia. In the effort to give only round numbers, however, it has been made needlessly inaccurate. Thus, H. of 2 Dioptres is said to represent a shortening of 0.5 mm., and H. of 3 Dioptres of 1 mm. But in spite of these slight imperfections, to one who knew what an excellent manual Nettleship's Guide already was, it must be a surprise to see how much he has been able to improve it. Never before has it so well deserved the high reputation it has won.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, October 3, 1887.

The Vice-President, S.W. Gross, M.D., in the Chair.

Dr. Thomas G. Morton made some remarks on two cases of

EXCISION OF THE KNEE-JOINT

which presented some novelties. In the case of a boy, eight years of age, with strumous synovitis of the knee, he made an incision in the median line, intending to split the patella and draw it to either side, and then excise the joint and stitch it together. On cutting through the patella, however, he found that it was the seat of necrosis. He continued the incision in the median line and dissected out the patella. This was the first time that he had operated in this way, and he found that it was an exceedingly nice form of operation.

The second operation was for destructive synovitis of the knee occurring in a man, twenty-two years of age, who had worked until two days before his admission to the hospital, when he had a temperature of 101°, which continued for the next five days. In this case there was a sinus about two inches above the patella and to its inner side. This was opened sufficiently to admit the finger, and the joint was found involved, the suppuration being moderate in amount. The incision was then continued downward, and he was able to displace the patella with its ligament, and the tendon of the quadriceps muscle to the outer side. There was not the slightest trouble in making the excision of the joint. The patella was slightly eroded. He shaved off this portion, and also a corresponding portion of the femur and brought the two bones in contact. At the time o operation the temperature was 101.5°, has steadily decreased and has remained at normal since. The operation was done September 23d, and the dressing has not yet been removed.

In another case if he did not split the patella he would, as in the last case, draw the patella to one side.

For fixation he drills the tibia in three places, and the femur in a corresponding manner, and then ties them together with what is known as "twenty-eight day catgut." In only one instance has he known any portion of the catgut to come away. There has been no suppuration in any case where ordinary antisepsis has been employed.

There is one practical point that might be referred to, and that is, that, in drilling these bones, an ordinary bradawl answers every purpose. He never allows the instrument to perforate the articular surfaces, but makes

the opening just above them. With regard to the further treatment of the joint, he uses a slightly angular posterior splint placed along the outer side of the limb, binding them together with a roller bandage. He has had the best results, and it is rare that he has to dress any case before the second week.

Dr. Charles B. Nancrede related a case of

LUMBAR COLOTOMY

which presents certain points of interest with reference to prognosis, diagnosis, and treatment, and with reference to certain operative measures. The history of the case is briefly as follows: The man stated that while in the army he had dysentery, and that since that time he thought that the passage was small. There was probably then a stricture of large calibre. Seven or eight years ago he discovered an anal fistula, which was operated on successfully. Over two years ago another fistula formed, for which he was operated on, and, so far as can be ascertained, the stricture was detected at this time and also operated upon, for, after his recovery from the operation, he began to pass flatus and feces through the urethra. The stricture had evidently been cut so deeply that either from the depth of the incision or the subsequent ulceration, an opening had formed into the bladder. One year ago he was operated on for the extension and deep infiltration of the tissues of the fundament. He was at first benefited by the operation, but again relapsed, passing considerable quantities of feces through the urethra, and on several occasions had attacks of partial obstruction of the bowels resulting in fecal vomiting. His suffering gradually became very severe. When he came under observation the question which presented itself was, Is this a carcinoma or an ordinary fibrous or cicatricial stricture resulting from the old attack of dysentery? He recommended that left lumbar colotomy be performed, with the hope that the passage of the feces into the bladder would be obviated, and that if the stricture were not carcinomatous there might be some amelioration of the local condition. He performed the operation, and at the end of seventeen days the patient ceased to pass water by the rectum, and the indurated fundament had softened down wonderfully, and the so-called cancerous ulceration is beginning to heal at the edges. He did not believe this a case of cancer.

A word with reference to the operative measure. Usually when we get down to the colon it can be readily brought to the surface and recognized. In this case it was absolutely impossible to be sure what was present. The transversalis fascia was as dense as he had often seen the fascia lata of the thigh. The kidney fat was very deep, and the bowel was fully the distance of a forefinger below the surface of the skin. He then resorted to what he had seen recommended, but had never found it necessary to use—that is, inflation of the bowel. At once the colon came up into the wound, and there was not the slightest difficulty in recognizing and opening it. He did not see why this procedure might not be used with advantage in many cases of colotomy. In this case, although the colon was not distended, the man passed during the next ten days fully half a bucketful of feces.

Dr. Morton recalled an interesting case of lumbar colotomy in which, after making his incision, he reached a tissue which he could not diagnosticate. He punctured it and found a large cyst of the kidney. This was certainly as large as a goose's egg. After the cyst was evacuated the bowel rose up, and there was no difficulty. Not long ago a lady came to me with stricture of the rectum. Digital examination showed a dense stricture involving the whole circumference of the bowel, about one and a half inches within the anus. The ordinary uterine sound passed through it with difficulty. There had been no passage for a long time except of the most liquid character. It was a question between lumbar colotomy and excision of the entire stricture. He had little doubt that it was a syphilitic stricture, although he had no positive proof that it was of this nature. He determined to attempt removal of the stricture, with the patient's permission, to perform lumbar colotomy if he could not get above the stricture. He found that the entire stricture could be removed, and he did so, bringing the healthy bowel down and stitching it to the external surface. He had received a letter from this patient stating that she is absolutely well, and that she is able to have large passages without the slightest pain.

Dr. John B. Roberts said that there is one question about stricture of the rectum on which he should like to have an authoritative opinion. This was forcibly brought to mind by the death of a patient on whom he had operated for stricture of the rectum, and he has known of several similar cases with the same result. The case to which he referred was one of long-standing rectal disease, with symptoms of stricture for eighteen years. The patient had at first been told that it was carcinoma but, as she did not die, the diagnosis was evidently incorrect, and he was asked to see the case in consultation. The woman was exceedingly nervous. On examination, he found a dense annular stricture one and a half inches within the anus. Under ether, he made an incision, and dilated the stricture with his finger. He then introduced a large bougie, and, although he could introduce it with ease, he found that, unless he carried the base far back toward the sacrum, it always caught. On further examination, he found another obstruction high up. It felt like a hard tumor, and did not seem to be a cicatricial band like that already divided. He made a nick in this, and the bougie could then be passed without trouble. The next day he found that there had been a great deal of pain, and that the patient had insisted on sitting up in bed. There had been some bleeding, which had been checked by packing the rectum with ice. When he saw her the bleeding had stopped. That evening she insisted on getting out of bed and sitting on the commode, and had a large hemorrhage, followed by a second, from which she promptly died.

At the autopsy there was a large quantity of blood in the pelvis. There was no sign of any tumor, or of any obstruction. It may be that the second obstruction which he felt was due to a bend in the bowel, resulting from the old adhesions, and that above this the bowel was dilated and its walls thin. He should like to know the experience of other members of the Academy with this condition. In another case, in which an old lady complained of obstruction of the rectum, he passed a bougie and found nothing wrong. There were some hemorrhoids, on which he operated. This patient died

of peritonitis in a few days. He recalled a case in the practice of another surgeon, where an ordinary stricture was dilated, and the patient died of peritonitis.

Dr. Charles B. Nancrede asked if it is ever a good plan to use a bougie immediately after nicking a stricture? The death in stricture, where the fatal result is not due to exhaustion, results from the feces and discharges lying in contact with the upper portion of the bowel until they induce ulceration, perforation, and peritonitis, or they induce peritonitis as a result of the extension of inflammation from within outward. He thought that after nicking a stricture it is dangerous to trust to anything but the finger. This at once recognizes when a dangerous locality is approached. With a bougie one may get into an ulcerated, irregular portion of the bowel, where an amount of pressure not recognizable by the hand will produce perforation.

There is another point to which he would like to call attention, and that is, in stricture of the rectum, if we do not cut all the way back, there will be left a surface where there can be no drainage, and there is a strong probability that septicæmia will result. In operating on a stricture, it is better to cut back to the sacrum and coccyx, and then the diseased structure can be attacked without danger.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 6, 1887.

The President, A. Jacobi, M.D., in the Chair.

Dr. P. Albert Morrow read a paper on

THE MODERN METHOD OF TREATING SYPHILIS.

He said that the treatment of syphilis in this century differed from that of the fifteenth century in the modification of the method, and in detail rather than in essential nature. If stability be recognized as a true test of the value of a mode of treatment, the treatment of syphilis by mercury, having the stamp of professional approval after four centuries, might be regarded as of special value. But its mode of administration had been greatly changed; we had learned its limitations. We now regarded any treatment which seriously disturbed physiological functions as pernicious. Instead of overwhelming the syphilitic diathesis with metallic masses, the treatment had been extended, so to speak, to correspond with the natural life of the malady.

Dr. Morrow then took up the question of the use of mercury hypodermatically. This was not merely a different method of administering the drug, but, if the claims of its enthusiastic advocates were well founded, it overturned the general belief in the necessity for the long continued use of the drug, and the large quantity required.

Dr. Morrow's personal experience with the hypodermatic use of mercury was limited, but during the summer he had observed its employment in a large number of cases in the Paris hospitals. Some made use of the soluble, others of the insoluble salts. He gave the experience of Lewin, Jullien, of Lyons, Martineau, Balzer, DuCastel, Besnier, and others. The treatment by the soluble salts involved the introduction of a quantity of bichloride of mercury or its equivalent in other forms of one-eighth to one-sixth of a grain a day for thirty days; requiring, according to Lewin, about twenty-five centigrammes (nearly four grains) to effect a cure. By the insoluble salts the treatment required the introduction of ten centigrammes (one and a half grains) of calomel or the yellow oxide of mercury, and a repetition of this on an average four times, at intervals of from eight to fifteen days. The accidents from the hypodermatic method had become reduced very greatly. Jullien had not had an accident in several thousand cases. Dr. Morrow's paper concluded as follows:

In endeavoring to appreciate the therapeutic worth of the modern method of treating syphilis, we are confronted by a mass of confusing clinical statistics, as well as a crowd of contradictory statements on the part of the experimenters, some bearing testimony to its superior efficacy, others depreciating its value, and condemning it as obnoxious and impracticable. A careful weighing of this clinical testimony, balanced by my own observation and experience, justifies the following conclusions: The hypodermatic use of mercury, in simplicity, convenience, scientific accuracy, rapidity of action, and the development of a maximum effect from a minimum quantity of the drug, constitutes a decided improvement of the ordinary modes of its introduction into the system. The hypodermatic method is not so liable to cause salivation, gastro-intestinal disorders, and other toxic symptoms of hydrargyrism. There is a remarkable unanimity of opinion among observers as to its efficacy in suppressing the active manifestations of the secondary stage, and hastening their involution. The claims that the subcutaneous introduction of mercury increases its potentiality, and widens the range of its specific action, enabling it not only to subdue refractory secondary lesions which resist ordinary treatment, but also the tertiary lesions of syphilis, may be considered as yet *sub judice*. The claim that it endows mercury with a greater permanency of effect, preventing relapses, and preserving the patient from manifestations of the diathesis for a long time, is not proven. The more pretentious claim that the hypodermatic introduction of twenty-five centigrammes (four grains) of the bichloride, or forty centigrammes (six grains) of calomel, *cures* syphilis, must be rejected as extravagant and absurd. The irritant action of mercury introduced hypodermatically, manifest in the production of pain and local accidents, renders its general employment in the systematic treatment of syphilis impracticable. The proper position of the hypodermatic method in the therapeutics of syphilis is in the category of adjuvants. Its employment is indicated when the necessities of the case demand a rapid and intense mercurialization. In certain emergencies —when the integrity of an important organ is threatened, for example—its prompt and energetic action renders it superior to other modes of mercurialization. In exceptional cases—marital syphilis, for example—when the exigencies of the situation demand secrecy in treatment with the speediest possible suppression of the symptoms, this method is to be recommended. It constitutes a most excellent reserve treatment in cases where the gastro-intestinal irritability is so marked as to forbid the introduction of mercury by the stomach. In cases of tertiary syphilis, where iodine idiosyncrasy

is so marked that the iodide of potassium cannot be employed, hypodermatic injections of mercury should be substituted. While my own impression is that the hypodermatic method will never supersede the classic modes of employing mercury, I regard it as a decided acquisition to our therapeutic resources against syphilis —too valuable to be ignored, or practically disregarded, as has been the case in this country.

Drs. Bronson, R. W. Taylor, F. R. Sturgis, L. D. Bulkley, and the President, discussed the paper. Most of them had begun the use of the injections about 1869–70, at a time when the irritant effects of the injections were such as to cause them to cease the practice. Dr. Taylor had continued the method, using the different salts in special cases since, and he said that the treatment was applicable only under special conditions, corresponding in general to those contained in Dr. Morrow's concluding remarks. The President had certainly used bichloride with advantage in hereditary syphilis with severe and early symptoms. Dr. Bulkley thought the method was called for. Dr. Morrow closed the discussion, and said the object of his paper was to give the present status of this way of introducing mercury into the system.

NEWS ITEMS.

THE CHOLERA AT NEW YORK.—Health Officer William H. Smith, M.D., of the Port of New York, furnishes the following statement, under date of the 5th instant:

The steamship "Alesia," from Marseilles, August 29, and Naples, September 3, with most of her cargo taken at Marseilles—at Naples she received her cargo by lighters —arrived at this quarantine and was inspected the morning of September 23.

The report of the surgeon showed that there had been eight deaths on board, six of which were unquestionably cholera. "All the cases reported were fatal. Four cases were found in hospital sick with the disease, and four cases were discovered while inspecting the passengers. I may here refer to the fact that the bill of health from the consul at Naples declared that "there had been many cases of cholera at Naples and vicinity for the last five weeks. The exact number could not be ascertained. The mortality of those attacked is 70 per cent." (Consular bill of health. The well passengers were removed the same day to Hoffman Island for observation, and the sick to Swinburne Island Hospital. The number of cases on board on arrival was eight; twenty cases have developed among the passengers since they have been under observation to this date; five of those removed from the vessel have died and three recovered. Of those that have developed while in quarantine, nine have died, four have recovered, five are convalescent, and the remaining two are now seriously ill. The disease has been very virulent and rapid in its fatality in a majority of the cases; in several instances patients that were well at the inspection in the afternoon were nearly or quite pulseless within twelve hours. At this date there has been no development of cases among the immigrants for the past two days.

The steamer was twice washed with scalding water from the boilers through the hose in every accessible part, and immediately after this washed in every part with a solution of corrosive sublimate, two parts to one thousand. The hatches had been closed and sealed, and covered with tarpaulin before the passengers were taken on board, except three cabin passengers, taken at Marseilles. All the immigrants were removed to Hoffman island. Immediately subsequent to the washings with the solution of mercuric chloride, after breaking out the cargo to the bottom of the hold, one hundred pounds of sulphur were burned in the hold, the hatches of the spar-deck being closed for ten or twelve hours. The disinfection by the solution before mentioned was the next day repeated, every accessible portion of the vessel being washed with it by brooms or sponges, followed by the combustion of one hundred and fifty pounds of sulphur, the hatches being again closed until the following morning. Every textile fabric—carpets, mats, the dunnage and clothing of the crew—were immersed in boiling water for a considerable time by the introduction of steam through hose attached to the boilers. Finally, all exposed portions of the steamer, except the saloons, including the forecastle, were repainted.

The steamer was detained in the lower bay fourteen days. The well passengers were removed to Hoffman Island for observation, and the sick to Swinburne Island Hospital the day of their arrival at quarantine. The cleansing and disinfecting of the baggage of the immigrants commenced immediately thereafter. A large tank that can be securely closed, having a perforated pipe, and extending from the bottom to the under side of the lid, and connecting with a large boiler used for heating the buildings, is used in part for the disinfection. Two rooms, fifteen by twenty feet each, made as close as possible, are used to disinfect by the combustion of sulphur. Each piece of baggage and every article of clothing have been subjected to sulphurous acid gas thus produced for several hours, in the ratio of three pounds to each one thousand cubic feet of air-space. The disinfection by moist steam heat has been at the same time constantly in progress—the clothing is subjected to this process for at least three hours. Barrels of a solution of bichloride of mercury are placed in the closets and used to wash them after the dejecta of each person has been removed by the flush from the tanks above the hopper of the closet. Every day the floors of the large buildings, each 50 by about 150 feet, are washed with a solution of the same article. To-day the subjection of each and every article of baggage has been again commenced, and will be continued until all articles have been again disinfected by the means mentioned.

For two days past no new cases have developed. It is well to state that the first cases on the "Alesia" developed the ninth day after the steamer left Naples. It is as yet an open question whether the cases that have developed on Hoffman Island arose from infection contracted from the same source that gave rise to the deaths on board the steamer, or from sources that were transferred to Hoffman Island with the passengers. There is every reason to believe at this writing that the infection among the immigrants is destroyed, except, possibly, that its development may be exceptionally long delayed in cases which may occur.

THE CHOLERA.—The *British Medical Journal* of September 24, 1887, contains the following notes upon the cholera:

The hopeful signs of a cessation of the cholera epidemic, which seemed to be evident a fortnight ago, have, unfortunately, not been maintained; for, during the past week, the disease has broken out with renewed violence at Messina, in Sicily. As many as 156 cases and 44 deaths are reported to have occurred there on September 20. This recrudescence is reported to be associated in the local mind with the arrival in the port of a vessel from India; but the only foundation for such an opinion appears to be the fact that, while unloading, some of her crew fell ill and died. The disease maintains its foothold in Catania, Palermo, Tripani, and other Sicilian towns. In the neighborhood of Naples, the disease has also shown a tendency to increase, especially around Castellamare. In Malta, the disease continues to cause several deaths daily. Up to September 22, 389 cases and 248 deaths had already occurred on the island.

BACTERIOLOGY IN SPAIN.—A bacteriological laboratory has been established at Barcelona. Dr. Iaime Ferran, whose name will no doubt be remembered in connection with the so-called preventive inoculations of cholera two or three years ago, has been appointed Director of the institution, with Dr. Inocente Pauli as chief assistant. The laboratory owes its establishment in a great measure to the initiative of Don Pablo Despax, a rich merchant of Barcelona, whose first intention was to found an institute for the treatment of hydrophobia, on the model of M. Pasteur's. On the matter being brought before the municipal authorities, however, they determined to establish a fully equipped bacteriological laboratory. The buildings, which are now completed, are in the gardens of the Asilo de los Pobres; they contain rooms for microphotography, for histological and bacteriological researches, and for inoculations, together with all the necessary instruments and appliances. Other rooms are fitted up as museums, and there is also a library. Antirabic inoculations will be carried out by Dr. Ferran and a staff of assistants, in strict conformity with M. Pasteur's methods.—*British Medical Journal*, October 1, 1887.

WHOOPING COUGH LEGALLY CONSIDERED CONTAGIOUS.—The Attorney-General of Michigan, in response to an inquiry from the State Board of Health, has included whooping cough in the diseases declared "dangerous to the public health," and physicians will hereafter be legally bound to report it among contagious and infectious diseases.

MEANS ADVISED BY THE INTERNATIONAL CONGRESS OF HYGIENE, AT VIENNA, FOR CHECKING FOOD ADULTERATION.—CARO, of Madrid, HILGER, of Erlangen, and VAN HAMEL ROOS, of Amsterdam, in the discussion of the means which could be adopted by all nations for the prevention of food adulteration, advised the foundation of an International Commission, three members from each country, to take measures for suppressing fraud in foods; this Commission to control regularly the sale of foods, being in constant coöperation with scientific authorities in hygiene and medicine in their several countries. This Commission is also to establish stations for the municipal examination of food, completely and uniformly organized and equipped. Uniform methods of examination and criterions of judgment are to be adopted, and international legislation, as uniform as possible, is urged. The technique of the examinations to be made is described, and the apparatus to be employed.—*Revue International des Falsifications des Denrées Alimentaires*, September 15, 1887.

VIENNA VACATION COURSES.—These courses, inaugurated during the recent vacation season in Vienna, were much less frequented than was expected, the chief attendants having been foreigners.

MEDICAL TEACHING AT OXFORD.—Oxford University has recently erected and equipped buildings devoted to the study of anatomy and physiology, with histology. The future student of medicine can now ground himself thoroughly in these branches, and in chemistry, at Oxford, before entering a college of medicine.

CONTAGION FROM LIBRARY BOOKS.—The sanitary authorities of Hawick, Eng., have requested, and the public library board requires, that those who take books from the library shall sign a statement that no infectious disease exists in their houses; that they will return the books and give notice if any infectious disease appears.—*Sanitary Inspector*, September, 1887.

A CURIOUS ADULTERATION OF MACE.—A very strange adulteration of mace has been lately observed in Amsterdam. Pulverized biscuit had been mixed with mace in a very large proportion. This adulterated spice was sold in several shops, and, looking at the enormous difference of price, a nice profit must have been yielded. Unfortunately, the mixture was not seized in the presence of witnesses, and the justice could not interfere.—*Revue Nationale Scientifique et Populaire des Falsifications des Denrées Alimentaires*, September 15, 1887.

COLOR-BLINDNESS AMONG THE RAILWAY OFFICIALS OF GERMANY.—An extensive investigation into the prevalence of color-blindness amongst German railway officials has afforded some interesting results. The inquiry, which has lasted severa years—the latest data having been obtained on July 1, 1886—was extended to seventy-nine railways. Of 104,743 persons tested from April 1, 1882, to July 1, 1886, 850, or 0.81 per cent., were found to be color-blind. Of 239,726 persons tested up to July of last year, 1934, or 0 81 per cent., were color-blind, while in 145,556 officials and other servants employed on the seventy-nine railways on July 1, 1886, 100 were entirely and 441 partially color-blind, a percentage of 0.37. The methods of testing were chiefly the Stilling method (by means of color-plates) and the Holmgren method (by means of colored woollen threads); but the Cohn, Schmidt, and Rimpler methods were also adopted. In 16,201 cases the test was repeated, and 305 times only did the results differ from former results. The officials of German railways who are color-blind have been given duties, in the discharge of which their incapacity can have no ill results, so that there is no

danger of their continued employment in dangerous posts.—*British Medical Journal*, September 3, 1887.

ON BALDNESS.—DR. AUSTIN FLINT sends to the *Popular Science Monthly* for October, 1887, an article written in 1853 by his father, which we quote as follows:

I send an extract from this article which appeared as an editorial in the *Buffalo Medical Journal*, March, 1853, No. 10, page 651, and was entitled "Hats and Baldness": . . . . The most characteristic trait of the hat is the tightness with which it encircles the head. Herein consists, in our opinion, its agency in the loss of hair. The stove-pipe hat must needs encircle the head tightly, in order to be secure in its position in spite of wind and other disturbing forces. To appreciate the degree of compression, one has only to note the indentation on the forehead after a tightly fitting hat has been worn for some time. Everybody knows how commonly this is to be observed. The head is, in fact, pretty firmly ligated while the hat is worn. Now, what must be the effect of this on the circulation? Plainly, the effect is to interrupt the circulation in the scalp above the circle on which the compression is made. It is precisely like tying a cord around the head, sufficiently to diminish, if not stop, for a time, the flow of blood through the temporal and other arteries by which blood is distributed to the superior portion of the scalp. The hair follicles, as is well known, are very vascular. Their functions require this vascularity, and an adequate, constant supply of oxygenated blood. If this supply be diminished, the growth and nutrition of the hairs are proportionally affected, and, finally, the *pulp* inclosed in the follicle withers and dies, as does any other part when deprived of the *pabulum vitæ*. This effect occurs on the crown, because interruption of the circulation in arteries is always felt most in the parts to which the terminal branches are distributed.

"Such is our explanation of the fact that baldness is so frequently observed in the young and middle-aged men of the present generation. The remedy is to repudiate the present fashion of hats. Let some inventive genius devise a substitute for the unseemly, as well as hair-destructive, article which is now the *mode*, and we are firmly convinced that toupees will become objects of curiosity rather than utility, and the bald pate will again be venerated as the distinguishing trait of old age." . .

A COMMISSION TO REGULATE THE PRODUCTION AND USE OF ALCOHOL.—The French are about to appoint a commission under the presidency of Léon Say, composed of senators, deputies, the Dean of the Faculty of Medicine, and practical chemists, to legislate regarding alcohol and the hygiene of beverages.

AN INTERNATIONAL JOURNAL IN THE INTEREST OF PURE FOODS has been recently established. It is edited by VAN HAMEL ROOS, of Amsterdam, and has upon its staff collaborators from the civilized countries of the world. The American contributor is Dr. Tucker, of Albany. The journal is published in French, German, and English. It will be published six times yearly, each issue containing from 150 to 180 large pages. At the recent meeting of the International Congress of Hygiene, at Vienna, the journal was declared the official organ of the Congress.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM OCTOBER 4 TO OCTOBER 10, 1887.

HALL, WILLIAM R., *Captain and Assistant Surgeon.*—Ordered from David's Island to Fort Custer, Montana.—*S. O. 232, A. G. O.*, October 5, 1887.

PRICE, C. E., *Captain and Assistant Surgeon.*—Ordered from Fort Custer to Fort DuChesne, Utah Territory.—*S. O. 232, A. G. O.*, October 5, 1887.

SUTER, WILLIAM N., *First Lieutenant and Assistant Surgeon.*—Ordered from Washington Barracks to Fort McKinney, Wyoming Territory.—*S. O. 232, A. G. O.*, October 5, 1887.

WEISEL, D., *Captain and Assistant Surgeon.*—Ordered from Fort McKinney to Fort Sill, Indian Territory.—*S. O. 232, A. G. O.*, October 5, 1887.

HORTON, S. M., *Major and Surgeon.*—Ordered from Fort Riley to Fort Adams, Rhode Island.—*S. O. 232, A. G. O.*, October 5, 1887.

BACHE, D., *Major and Surgeon.*—Ordered from Fort Adams to Fort Riley, Kansas.—*S. O. 232, A. G. O.*, October 5, 1887.

KIMBALL, J. P., *Major and Surgeon.*—Ordered from West Point to Fort Elliott, Texas.—*S. O. 232, A. G. O.*, October 5, 1887.

NEWTON, R. C., *Captain and Assistant Surgeon.*—Ordered from Fort Elliott to David's Island, New York Harbor.—*S. O. 232, A. G. O.*, October 5, 1887.

HEIZMANN, C. L., *Major and Surgeon.*—Ordered from Fort Ontario to West Point, New York.—*S. O. 232, A. G. O.*, October 5, 1887.

CASTER, E. C., *Captain and Assistant Surgeon.*—Leave of absence further extended fifteen days.—*S. O. 231, A. G. O.*, October 4, 1887.

CABELL, J. M., *First Lieutenant and Assistant Surgeon.*—Will be relieved from duty at Fort Omaha. Assigned to temporary duty with Battalion of the Sixth Infantry in the field.—*S. O. 98, Department of the Platte*, October 1, 1887.

BORDEN, W. C., *First Lieutenant and Assistant Surgeon.*—Will be relieved by officer commanding troops, upon arrival of Assistant Surgeon Cabell, and will return to his station, at Fort Douglas, Utah.—*S. O. 98, Department of the Platte*, October 1, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 8, 1887.

MARTIN, WILLIAM, *Assistant Surgeon.*—Detached from the Hospital, at Norfolk, and granted sixty days' leave.

BATES, N. L., *Medical Inspector.*—Detached from the Naval Dispensary, and ordered to the Examining and Retiring Boards.

PRICE, A. F., *Surgeon.* Ordered to the Naval Dispensary, at Washington, D. C.

WAGGENER, J. R., *Surgeon.*—Ordered to the Receiving Ship "Minnesota."

FITZSIMMONS, PAUL, *Surgeon.*—Detached from the "Minnesota," and ordered to the "Marion," October 15th.

VEEDER, LOUIS W., *Assistant Surgeon.*—Detached from the Receiving Ship "Vermont," and ordered to the "Marion," October 15th.

RUSH, W. H., *Passed Assistant Surgeon.*—Detached from the Coast Survey Steamer "Blake," and ordered to the Navy Yard, New York.

BERRYHILL, T. A., *Assistant Surgeon.*—Detached from the "Minnesota," and ordered to the "Blake."

DRENNAN, M. C., *Surgeon.* Detached from the Naval Academy, and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING OCTOBER 8, 1887.

IRWIN, FAIRFAX, *Passed Assistant Surgeon.*—Granted leave of absence for twenty-five days, October 5, 1887.

GUITERAS, JOHN, *Passed Assistant Surgeon.*—Granted leave of absence for seven days, September 28, 1887.

NORMAN, SEATON, *Assistant Surgeon.*—Upon expiration of leave of absence, to rejoin station, at New York, October 4, 1887.

THE MEDICAL NEWS.

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ORIGINAL LECTURES.

ON THE GENERAL ETIOLOGY AND SYMPTOMS OF CHOREA.

BASED ON THE RECORDS OF 410 CASES AT THE INFIRMARY FOR NERVOUS DISEASES, PHILADELPHIA.

Two lectures delivered at the Infirmary during the Summer Session.

BY WILLIAM OSLER, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

LECTURE II.

SYMPTOMS.

FEW affections have more clearly defined features than chorea. The involuntary and irregular contractions of various muscle groups give objective characters recognizable at a glance.

On careful inquiry we find very constantly initial symptoms of some moment. The child displays an unwonted restlessness, is unable to concentrate attention, or to sit still, a condition well expressed by the term "fidgets" so often used by mothers in describing the onset of the disease. The mental state is correspondingly irritable, and the child may become emotional, crying on the slightest provocation, and often displaying groundless fears. Night terrors are noted in a number of cases. Very commonly the temper suffers, and from a docile, quiet child, the poor victim becomes cross and unmanageable. Punishments inflicted at this stage by thoughtless parents or teachers aggravate the mischief, or even precipitate the attack. The appetite may fail, and anæmia not infrequently develops. After a week or two, the onset of the disease is shown by a marked increase in the restlessness, and by the occurrence of sudden involuntary movements. These may be noticed first at the table when the child spills a tumbler of water by a sudden jerk, or upsets a plate. In this stage, too, there may be pains in the limbs, more frequently the legs, and in the joints. Persistent headache is a not uncommon symptom.

For convenience we may recognize three grades of cases: *mild*, in which the affection of the muscles is slight, the speech not seriously involved, and the general health not much disturbed. *Severe*, in which the movements are general, the power of speech is lost, and the patient is unable to get about or help himself; and the *chorea insaniens*,[1] or maniacal chorea, characterized by profound cerebral disturbance.

The following cases illustrate these forms:

Ida A., æt. seven, was admitted to hospital April 24th, with her third attack of chorea. Early in January, 1885, she had an attack of acute rheumatism; was in bed four weeks. Mother also has rheumatism. One month after convalescence the chorea began, and for several months she twitched, chiefly on the right side. January 29, 1886, she had a second attack, and she attended at the clinic for three months. At this time there was no rheumatism, and the heart sounds were clear. About the end of March of this year, her mother noticed that she was extremely nervous and irritable, and on the 30th she had irregular jerky movements of both hands and of the shoulders, with an occasional facial grimace. On April 20th she returned very much worse; the movements of arms constant, speech not affected. She was admitted to hospital, put to bed, ordered Fowler's solution, ♏ v t. i. d., galvanism to the spine, and massage of the limbs daily. To be kept quiet and undisturbed. There was no heart murmur. She improved rapidly, and at the end of a week the movements had almost ceased. On May 7th she was discharged well.

This mild, ordinary case represents the common type of the disease as we have it at our clinics. It is interesting to note the occurrence of rheumatism, the absence of any heart murmur, and the recurrence in the spring.

An illustration of severe chorea is the following case:

Ella A. (sister of preceding), æt. nine. Has not had rheumatism. Has been nervous at school. Failed in some lessons. Was frightened at a lecture at the Wagner Institute, and three months ago was much upset by seeing a child injured and bleeding. The twitching first noticed in right arm. When brought to clinic, December 30th, she presented the appearance of a rosy, plump child. The condition was as follows: Choreic movements are universal; the hands and feet jerk about in a most violent manner, the movements usually beginning in the left side, and extending to the right. They number thirty to thirty-two in a minute, and are so strong that the most powerful restraint fails to repress them entirely. The hands will be drawn from the lap violently upward, striking the chest, or they will rise suddenly and fall heavily on the knees. When she is seated on a chair the feet will be lifted from the floor and come down suddenly with a loud stamp. The face is in constant movement; speech is almost impossible, and she presents a truly pitiable condition. So violent are the movements that she has frequently injured and bruised herself, and has several times inadvertently struck her mother. She is intelligent, sleeps well, even soundly; the movements ceasing completely. It was impossible to examine the heart on account of the extreme jactitation. She took Fowler's solution up to ♏ xv t. i. d. with benefit; but the case was protracted, and, though the violent movements subsided, it was several months before they disappeared.

We have four or five of these extreme cases every year; often they are carried into the clinic in some instances covered with bruises on the exposed and prominent portions of the body.

[1] Bernt: Monographia Choreæ Sancti Viti, Prague, 1810. Gee: St. Bartholomew's Hospital Reports, 1886.

There does not appear from the records to have been a case of the extreme maniacal chorea, c insaniens, under t current of the hospital, so I here give the notes of one which I saw with Dr. George Ross, in Montreal.

Emma M., a strong girl, æt. eighteen, was admitted to the General Hospital, October 17th. She was a waitress at a hotel, and when carrying a tray was badly frightened by two men who were fighting, and dropped her dishes. A severe reprimand only increased her fright. The next day she packed her trunk and went home, a distance of thirty miles, but met her father on the way, who insisted that she should return to Montreal. He says that her hands and arms were in constant motion from the way back her father got drunk, and threatened to go to jail if she did not keep quiet. Five days after this she was admitted. Arms and legs were in constant motion, jerking about in all directions; the face was spared. She was rational, but could scarcely speak. On the night of the 19th she had no sleep, raved and talked all the time; movements incessant. On the 20th, 21st, and 22d, this condition persisted, as rather grew worse, the temperature ranged from 101° to 103°, the tongue was dry and cracked, and she became much emaciated. On the night of the 22d the temperature rose to 105°, and she died exhausted five days after admission, and ten days from the onset of the symptoms. The tongue showed a coat of soft, warty vegetations on the anterior portion of the mucal segments.

There are many points of interest in the *symptomatology* of chorea which may be considered more in detail. Mitchell has pointed out in his lectures that there are differences in the character of the irregular movements, thus in one group, comprising the greater number of cases, there is "awkwardness and incoordination of voluntary movement, followed soon or late by automatic or involuntary spasms of various parts." In a second group the disease does not get beyond the stage of incoordination, and irregular movements only occur during willed actions. In a third group there are "constant, automatic, irregular, clonic spasms, usually of the hands, but during volitional acts these entirely vanish and the most complicated acts are well performed without obvious incoordination."

The various muscle groups are not equally affected in chorea, but there are usually special regions to which it is confined or from which, as starting-points, it spreads to other parts of the body. In a majority of the cases the hands are first involved, then the face, and subsequently the legs. The movements may be confined to one side, hemichorea, during the entire attack or for some weeks before the other side is invaded. It begins most often in the right side; thus, there were 126 cases in which the movements were at first dextral, starting usually in the hand, and only 80 instances in which the left side was first involved. The movements rarely start in the legs; in only 6 instances is it noted in the records. In about a dozen cases it is said to have been general from the first, but early symptoms are readily overlooked. In 126 cases the movements became general. The muscles of the trunk and face are, as a rule, bilaterally affected; we rarely see the one shoulder group involved without the other, and the facial grimaces are not often confined to one side.

In nearly one-fourth of the cases speech was affected. When slight this may be only an embarrassment or hesitancy and the child utters the words plainly. In other instances speech is an incoherent jumble, the tongue and lips move and sounds are uttered, but it is impossible to catch the words. Sometimes a few words are spluttered out in an explosive way. In very severe cases the child will make no attempt to speak. The inability is in articulation rather than phonation, the lips and tongue are more concerned than the intrinsic laryngeal muscles, or those of the expiratory group. In one case with marked spasm of the inspiratory muscles and involvement of the larynx, as shown by the whistling inspiration, the speech was not at all involved. In rare instances a difficulty in articulation is the first symptom noticed (Case 343[1]).

In Case 202 there were marked sighing and sobbing due to choreic spasm of the inspiratory muscles. Case 181 had paroxysms of panting and hard expiration. In several instances odd sounds were noted; thus, in Case 86 there were sounds in the throat like a sob, which continued day and night. Case 101 had a "peculiar noise in the throat," and Case 183 made a grunting noise while eating.

As a rule, the movements cease during sleep. In three cases they are stated to have persisted. In one of these, a child of four years, the movements may have been the irregular twitching seen during sleep in nervous children. In Case 121 the movements are said to have been first observed in sleep. In Case 119 *b*, a severe attack, the statement of the persistence during sleep is very specific.

Muscular weakness is a prominent symptom of chorea, and may result in a condition of paresis or even paralysis. It may be hemiplegic, paraplegic, or more frequently monoplegic. Of 28 cases in which there was a *physical test* of marked loss of power, the lesion was distributed as follows: legs, 6 cases; right hemiplegia, 4; left arm, 10; right arm, 6; arms and legs, 1; arms, 1. Very rarely does the loss of power reach the grade of complete paralysis, but the child may be unable to lift the arm to the head, the shoulder may droop, the grasp may be feeble or there is wrist drop. It is important to remember that there may be extreme paresis with slight incoordination and few spontaneous movements. To such case Todd gave the name of paralytic chorea. The weakness of the arm is shown by the enfeebled grip, of the leg by a dragging or by a decided limp. In his original description Sydenham speaks of the "unsteady movement of one of the legs, which the patient *drags*." The paralytic symptoms may precede or come in the course of the attack, more rarely follow it. In Case 89, a girl, aged sixteen, with subacute rheumatism, had a sudden loss of power in right arm and leg, with loss of voice, but retention of consciousness. The attack lasted only half an hour and was followed by pain in the limbs and choreic movements. The case was under observation for two months and made a good recovery. In the majority of the cases the paresis come on during the attack, was slight, and passed away with the disappearance of the chorea. Occasionally a local paralysis or weakness remains, as in Case 229, a lad of ten, who had a severe general chorea in September, 1880, during which the

[1] Loc. cit., p. 198.

limbs were paralyzed. He recovered gradually but when he returned in September, 1883, in a second attack, there was talipes of the left foot the result of the paralysis in former attacks. In Case 21, a wrist-drop remained for two years, the result of a palsy which came on with chorea of right arm. Case 91 illustrates a difficulty in determining whether a patient has ordinary chorea or is the subject of post-paralytic spasms. Girl, aged five, when two years old had congestion of the brain followed by hemiplegia which disappeared in a few weeks. Since the attack there have been more or less general choreic movements, which at the age of five were slight, though distinct. With arsenic they disappeared in three months. The history suggests a post-paralytic case, but the complete recovery is unlike the usual sequence in this condition. Gowers[1] and Ollivier[2] have written fully on the subject of paralytic chorea, and our experience tallies very closely with theirs. It is not often of serious import and usually disappears.

Do the choreic spasms extend to the muscles of organic life? So far as our experience goes, the great gastro-intestinal muscle is never affected; certainly there are no symptoms which can be referred to irregular contractions of the coats of the stomach or bowel. Abdominal pain is not often a complaint; constipation, however, is not uncommon. The sphincter ani remains uninvolved. So, also, the bladder acts normally in the most extreme cases. There are a few instances of incontinence of urine, but not more than we might expect in the records of 400 children. Spasm of the bronchial muscles, inducing asthmatic attack, is not met with even in those cases in which the respiratory muscles are involved. By some writers the irregularity and rapidity of the heart's action, and the mitral systolic murmur have been regarded as due to disturbed rhythm in the ventricular contractions, and to choreic spasm of the papillary muscles; but this is a mere conjecture, and the symptoms are explicable in a more reasonable way.

Sensory troubles occupy a less important part in the history of chorea. Pain in the muscles or nerves of the affected limbs is not common. In children it is sometimes difficult to get an accurate idea of the seat of the pain. There are instances, usually of hemichorea, in which pain, without arthritic complication, is a very marked symptom. Mitchell has spoken of these cases as *painful* choreas. Numbness, tingling, and pricking sensations are mentioned five or six times in the records. Anæsthesia of the affected side, which has been noted by several writers, has not been observed. Tender points, on which the French writers have laid so much stress, have not been frequently observed. In the printed schedule of our chorea books there is a special question relating to this subject, and in the great majority of the cases it is followed by a negative statement. In a few instances there were sensitive regions over the cervical, dorsal, or lumbar spines. It is the experience at our clinics that these tender points, either dorsal or along the course of the nerves, are very uncommon. Marie[3] has compared them to the hysterogenic points in hysteria, and has also found ovarian tenderness in a number of cases, always on the same side as the chorea.

[1] Brit. Med. Journal, 1880. [2] Archives de Neurologie, 1884.
[3] Progrès Médical, 1886.

Headache is a frequent, and in some cases a persistent, symptom. It may precede the attack.

Psychical disturbance is rarely absent in chorea, though fortunately, in the majority of cases, slight in degree. On the moral side we have irritability of temper, often a strange perverseness, and emotional outbreaks. A frequent complaint of the mother is "that the character of the child is completely changed." The memory becomes enfeebled, and the aptitude for study is lost. This impairment of the intellect may be progressive, and terminate in positive dementia. Usually we can "read the mind's complexion in the face," and can see, as the case progresses, the clouds obscure a bright, clear countenance, leaving it dull, heavy, and expressionless. There may be hallucinations of sight or of hearing. The patient may do odd, meaningless acts. Thus, Case 150, a girl of twenty-one, with a second attack, would hide away her clothes, and, on one occasion, wandered off for two days alone. More serious still are the cases, usually young adults, with mania, the *chorea insaniens* of Bernt. A large proportion of the fatal cases come in this class. The delirium is of an active, noisy character, and there are instances on record in which the chorea has been overlooked, and the patients sent to an asylum. Usually, but not necessarily, the motor disturbance in these cases is of an aggravated character. So impressed have some observers been with the predominance of the psychical trouble in chorea that they have regarded the motor disorder as an epiphenomenon of secondary importance.

Epileptiform seizures may occur, and there are records of five cases with convulsive attacks, or periods of sudden unconsciousness. Case 110 had a severe convulsion during the course of the disease. In Case 410, the child, æt. nine, has had for five years epileptic attacks, not numerous, only three or four a year. She is now, May 4, 1887, in her second severe attack of chorea.

In Cases 202, 232, and 248, there were attacks of loss of consciousness, possibly epileptic. Gowers has called attention to the relation of chorea to convulsive seizures,[1] and has reported ten cases. The infirmary experience does not indicate a common association of the two affections.

A relationship with *hysteria* is much more frequent, and there are a dozen cases, all in girls from fourteen to twenty-seven years of age, which presented marked hysterical symptoms, while many others had minor manifestations. With one exception the movements in these cases were those of ordinary chorea, and the symptoms of hysteria were subsidiary. In case 239, a girl aged nineteen, was affected with "jerking spasms" in legs and arms, which came on suddenly. She had had hysterical spells, and had been troubled with constant eructations of gas. The movements of the arms and shoulders became very rhythmic, and the head was moved from side to side.

The condition of the *reflexes* has been studied by Sinkler in 50 cases,[2] with the following results; in 26, the knee-jerk was normal; in 15 it was diminished in degree; and in 9 it could not be obtained.

Trophic lesions are not common in chorea, unless we regard, as some would have us do, the joint troubles as arthropathies occurring in the course of a cerebro-spinal

[1] British Med. Journ., 1878. [2] Loc. cit., p. 448.

disease. Under this head, however, we may very properly consider the skin affections, of which the records mention 11 cases. In five of these the rash was erythematous or papular, and unquestionably due to arsenic. In Case 332, a boy of seven, there was a pigmentary change in the right cheek after a course of Fowler's solution for six weeks. It is highly probable that the rash was due to arsenic. Similar cases are reported by "Oscar Chamille," and Stewart.[3] There were two cases of herpes zoster. In case 2, a girl of seven, the vesicles came out on the right side about three weeks after beginning to take arsenic. In Case 318, a girl of eleven, the herpes was on the left side in the lumbar region, and appeared about seven weeks after beginning the arsenic treatment.

Case 15, girl aged eighteen; no manifestations of rheumatism; had been taking arsenic for ten days when an erythema resembling erythema nodosum appeared, and remained for some days. In Case 312, girl aged eight, with pains in wrists at time of attacks, but no swelling. There were black and blue raised spots on the face. They were not painful, and came out in crops. They did not disappear on pressure, and resembled a purpuric eruption. Apparently the rash was not due to the arsenic, as in one attack, at least, it appeared before the administration. In Case 347, child aged eight, had first attack of chorea in 1885; second attack in 1888, preceded by acute rheumatism; knees and ankles swollen, and they were large, swollen, purple blotches on the legs and arms.

In these last instances we have probably illustrations of purpura rheumatica, which not infrequently occurs in children, in acute paroxysms, with very slight rheumatic trouble. They assume mild forms of the peliosis rheumatica (Schonlein).

Several [illegible] of the cases were treated by the arsenic so commonly used, but it is probable that none of them took the remedies in sufficient quantity to produce curative effects in the disease itself. [illegible] Roberts has observed a case of purpura, and [illegible] has reported several cases of erythema.

Cases of complete paresis are unusual in our records. In Case 10, where the [illegible] occurred on the 3d day, when, as occasionally happens, the endocarditis has ceased to exert any influence on the choreic symptoms. There may be the most extensive and violent movements, with normal temperature, and a great increase of the pulse rapidity throughout. Post-febrile chorea is [illegible] study of the disease [illegible] from different causes. In [illegible] practice it is rare to see [illegible] chorea. H. A. Hare[4] has called attention to the fact that in post-febrile the temperature of the affected side may be elevated.

The general symptoms of the disease shall be separately considered, and it need only be mentioned here that in [illegible] the pulse was [illegible] in Case 10 it was [illegible] during the attack.

[illegible]

[illegible]

The *duration* of an attack of chorea is extremely variable. From eight to ten weeks may be stated to be an average time for attacks of moderate severity. In mild cases, recovery may take place in two or three weeks. Not infrequently, however, cases drag on at the clinic for three or four months. The term *acute* chorea is applicable to those rare cases of extreme severity, with or without mania, which may terminate in a week or two. On the other hand, there are cases which drag on month after month and become truly chronic, lasting even for years. They are of sufficient interest to receive a separate consideration.

The liability to *recurrence* is an important fact in the history of chorea and has been carefully noted in the records. The 410 cases represent 683 separate attacks. In 240 cases there was a single attack; in 110, two; in 35, three; in 10, four; in 12, five; and in 3, six.[5] Case 23 is a good illustration of recurrence. Mary R., aged eight, came to the clinic March 23, 1877. The attack had begun in the autumn of the previous year and had continued. She improved rapidly under treatment, and the movements ceased. Toward the end of June the symptoms returned, and this is noted as a second attack, though probably it was only a relapse. The third attack was in August, 1880. The fourth in the spring of 1881. The fifth in January, 1882, and in February, 1883, she returned with a sixth attack. There was no rheumatism and the heart was not affected.

The notes give no clew to the conditions which render recurrence liable. Of the 60 cases in which there were three or more attacks, there was a history of rheumatism in 11, a proportion very much higher than in the cases with only one or two attacks. Mitchell has called attention to the vernal recurrence of chorea, and we have had many instances in which year after year, in March, April, or May, the patients would come back for treatment. Autumnal recurrence is certainly less common. It is the custom at our clinics to warn the patients of this tendency and to give instructions with a view to prevention, and even to order a course of arsenic in the early spring. Sydenham had observed this point, for he says that as "the disease is liable to return again, I think it well for the patient to be purged about the same time, or a little earlier, the following year."[1]

Certain cases of chorea display peculiarities sufficiently marked to warrant special consideration.

Choreic Tremor.—There are seven cases in our records in which tremor persisted for a period of years.

Case 37.—Martha K., aged seven. For five years has had choreic movements—sudden, abrupt, and decided, sometimes in the face, sometimes in the extremities. Menstruation began at fifteen years of age. No heart murmur, but she was anæmic. The movements were a good deal under control. After attendance for two months without benefit she disappeared from observation.

Case 40.—Lizzie, aged five. When two years old had convulsions, of the brain followed by hemiplegia, which disappeared in a few weeks. From this time she has been more or less choreic. When seen August 8, 1879 the movements were general but slight; none in face. Under the use of liq. potass. arsenitis, m ii t.i.d. she

[1] Loc. cit., p. 20

improved, and on December 31, 1881, the movements had ceased and the child seemed quite well.

Case 186.—Lizzie K., æt. twenty-one. No history of rheumatism. When thirteen years old had the first attack, which was general and affected the speech. After lasting, without intermission, for three years the movements ceased, and she returned December 1, 1882, with a second attack which had already lasted three months. There is no note of her return to clinic.

Case 246, already referred to as of congenital origin. —Jennie W., æt. nineteen. Good family history. Mother was frightened by seeing a marked case of chorea some time before the child was born. Movements began at birth and have continued. When seen February 3, 1884, movements general; muscles of face, arms, and legs in constant motion, mouth motions particularly affected. Muscles were well developed. She could knit and dress herself. Has been going to school; learns easily, intelligence fair.

Case 230.—Wilbur H., æt. twelve. No neurosis in family. As an infant, could not hold up the head or move the legs. At three or four months the choreic movements of the hands were noticed. When seen first, October 1, 1883, there were general, but slight, irregular movements. In May, 1887, the condition remained the same; there were slight jerky motions in extremities and head. Intelligence defective.

Case 335.—Mary M., æt. twelve. Mother very nervous and uncle had "spasms." For three years has had movements in face, head, and arms; speech never involved. On September 21, 1885, when first seen, the head was chiefly involved. The jerky movements of the right hand occurred when at rest, not when in use. She was treated for some months without much improvement. On the 7th of May, 1887, she returned to the clinic. The chorea had gradually disappeared, and, although nervous, she seemed very well.

Case 348.—Alfonso G., æt. twenty-one; baker. A sister had chorea, and died of heart disease in 1872. Was well until August, 1884, when he began to have jerking movements in head, arms, and legs. Speech somewhat affected. When first seen, June 1, 1885, there were spasmodic contractions of all the muscles of the face, neck, trunk, and arms; legs not affected. The inspiratory muscles were involved, and at times a high-pitched whistling inspiration occurred, as if the constrictors of the larynx were involved. He has been under observation and treatment for two years, and has somewhat improved. The movements of the arms have ceased, and the thoracic muscles are not much affected, but those of the head and neck are still involved. His general condition has remained excellent, and there has not been at any time mental disturbance.

The two congenital cases should go in a separate category, as possible instances of symptomatic chorea dependent upon widely diffused cerebral changes, but they illustrate clinically the most extreme form of chronic chorea.

In Case 91 the movements followed temporary hemiplegia, and might possibly be regarded as symptomatic; but as they were general and finally disappeared, it is not likely that they were the result of the lesion which induced the hemiplegia.

The other cases are peculiar only in the protracted course of the disease. It is encouraging to note the recovery, after three years' duration, in Cases 186 and 335.

Habit chorea.—This convenient term has been applied by Mitchell to certain local choreic movements, usually of the face, met with very frequently in children from the ages of seven to fourteen years. The orbicularis oculi, the corrugator supercilii, and the facial group are commonly affected, and the child repeats a series of grimaces. Occasionally it is limited to a single muscle. Motion of any sort aggravates the movement. In many instances it is at first nothing more than a trick which the child has caught, and can restrain, but constant repetition makes a habit which finally becomes uncontrollable and may persist throughout life. There may be movements of the shoulders and arms, and a case beginning as a local chorea may lapse into the pronounced general form. There are often associated movements of a curious character. Thus a lad with blepharospasm would, when walking, suddenly stop and put his feet together, or rotate the head. A lad at present in attendance has, in addition to slight facial chorea and a shrugging movement of the shoulders, the following curious trick: he will suddenly put the index-finger of the right hand between his teeth and bite it hard, while, at the same time, the pad of the second finger violently compresses the tip of the nose. The skin over the distal joint of the finger is raised in hard callosities, due to the constant biting; and the nose has become flattened. He is a sensible lad, and when asked why he does such a silly thing, answers, "I cannot help it—I feel I must," and in goes the finger as he speaks. Such habits have close affinities with the more infantile tricks of thumb-sucking, head-nodding, rocking, etc., and they are not without interest in connection with certain imperative conceptions of adult life.

Chorea of pregnancy.—In two cases of the 410, the attacks were in pregnant women.

Case 277.—A woman, æt. twenty, who had had repeated attacks of chorea, applied at the clinic October 15, 1884. She was married early in May. Began to have movements of limbs August 15th. At time of visit, both sides were involved and there was decided affection of speech. She had morning sickness, the menses had stopped, the breasts were enlarging, the papillæ prominent, and she was believed to be pregnant. She attended at the clinic for four weeks, and improved very much. The mental condition was good.

Case 236.—Mrs. B., æt. twenty-two, applied at the clinic November 16, 1883. Had an attack when nine years of age, and has been nervous ever since. Is pregnant. Attack began about September 15th, and has recently got worse. The right side chiefly involved; speech much affected; no mental symptoms. She remained under treatment for a few weeks, improved slightly, but did not return.

A third case was admitted to hospital in the spring of 1876. The notes have been mislaid, and I am indebted to Dr. Neff for the following memoranda. She was aged about thirty, a servant at the Colonnade Hotel. Had had chorea as a child. In the fourth or fifth month of pregnancy she accidentally broke a fifty-dollar demijohn of brandy and received a severe shock. Soon after, chorea developed and she was brought to the hospital. The attack was very severe, and after two

months she was transferred to the maternity department of the Philadelphia Hospital, where she died.

A fourth case is at present under treatment at Dr. Sinkler's clinic. Woman, æt. twenty-one, married three months. Menses have stopped, and she is believed to be pregnant. Nine years ago she had chorea—a most obstinate attack—which persisted for five years without intermission. She had a second attack, which lasted two months. The present one began shortly after her marriage, and is, possibly, not directly dependent upon pregnancy. It is, so far, not a serious attack.

The chorea of pregnancy is often severe, and the mental symptoms may be of the most aggravated kind; very many of the cases of chorea insaniens come in this category. Primiparæ are most frequently affected, and, as in the cases recorded above, previous chorea seems to play an important determining rôle. The mortality is high, ranging from twelve to thirty per cent. Two recent French monographs by Hervé[1] and Gayard[2] have reviewed the entire subject, but not added materially to our knowledge of the conditions under which it occurs.

ORIGINAL ARTICLES.

THE RELATIONS OF CHRONIC PHARYNGITIS TO INTRANASAL AND AURAL INFLAMMATION.

By RALPH W. SEISS, M.D.,

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For years past it has been the habit of almost all systematic writers to divide chronic pharyngitis into several varieties: simple, follicular, granular, and atrophic pharyngeal inflammation being the usual divisions adopted. The causes of the disease given by various authors are almost innumerable: the strumous, gouty, and rheumatic diatheses, heredity, overuse of the voice, and the abuse of tobacco, are enumerated by Morell Mackenzie as the especial factors; frequent attacks of acute sore throat are considered by many writers to be a necessary cause of this disease. A few writers, notably Seiler and Bosworth, state that nasal catarrh and consequent mouth breathing are very important factors in the disease, but the almost universal tendency among laryngologists seems to be to consider inflammation of the pharynx as belonging to at least three separate diseases, each with its especial etiology and clinical history.

For some years I have taught at the Philadelphia Polyclinic and elsewhere that chronic pharyngitis, when not syphilitic, or tubercular, or perhaps gastric in character, is always dependent on intranasal disease, and have been in the habit of correctly foretelling the pharyngeal condition present by an examination of the anterior nares. I consider all the various "varieties" of chronic sore throat to be simply stages of one progressive inflammatory disease, which is in turn almost invariably dependent on the stage of intranasal inflammation present in the case. My experience has led me to believe that overuse or improper use of the voice or gastric disturbances are rarely if ever the sole cause of grave chronic inflammation of the pharynx; of course, the already existing disease may be aggravated by them, but if the nasal passages be normal the pharynx will almost invariably be found in a similar condition.

In cases of simple chronic rhinitis the pharynx will be found to be in a condition of chronic hyperæmia, with the mucous membrane and underlying tissues somewhat swollen and infiltrated; the swelling being due to the proliferation of small cells in the sub-epithelial tissues. A few varicose and dilated bloodvessels show prominently on the mucous-streaked surface, although in this variety hypersecretion is not marked. It is rarely that any discomfort is experienced by the patient at this stage; "morning sore throat" is occasionally complained of, and there may be a trifling cough. If the simple rhinitis progresses, developing into the first stage of true hypertrophic catarrh, a new set of pathological phenomena appear in the pharynx; a chronic *lymphadenitis* is set up, the lymph follicles become enlarged, hard, and markedly hyperæmic, and now on inspection the well known conditions of "follicular pharyngitis" will be found. The mucous membrane presents much the same appearance as in the preceding form, but shows greater thickening, the vessels are more dilated and tortuous, and studding the posterior pharyngeal wall are seen numerous oval tumors of varying size, averaging half a centimetre in diameter, deep red in color, and each surrounded by an area of congestion. This condition may obtain for years without gross change, and I think, authors to the contrary, very rarely, at least in this climate, causing serious discomfort or any very prominent symptoms. Certainly the grave systemic disturbances which many writers have described as belonging to follicular sore throat must be exceedingly rare, since no disease is more common, and I have found the condition especially prevalent among physicians themselves, and the affection is frequently found among athletes and rowing men in the most robust health.

In patients in whom the nasal disease progresses through the second stage of hypertrophic rhinitis well marked changes take place in the pharynx. The contents of the enlarged lymph follicles soften, break down, and are absorbed, or more rarely they burst, and a small superficial ulcer results. Changes also take place in the proper glandular structures, the epithelium multiplies, the glands becoming choked with epithelial elements, and subsequent atrophy follows. This stage of chronic pharyngitis is the form most commonly seen in Philadelphia; the appearances are a swollen and infiltrated condition of the mucous membrane as in earlier stages, but varied by areas of atrophy from the pressure of newly formed tissue. The surface is studded with the often *cystic* remnants of follicles, or by the scars or minute ulcers left by their softening. The bloodvessels are large, numerous, and tortuous. Symptoms consisting of cough, "morning sore throat," dryness, hoarseness, and general discomfort

[1] De l'Ictère pendant la Grossesse. Paris, 1854.

[2] Contribution à l'étude de la coqueluche des Femmes enceintes. Paris, 1884.

in the pharyngeal region nearly always accompany this stage of the inflammatory process.

This *stage of breaking down* grows worse and worse as the nasal disease progresses into the third or sclerotic type of hypertrophic rhinitis. The sub-epithelial connective tissue becomes filled with small cells, which form a fibrillated structure, and the pressure exercised by this new growth induces atrophic changes, which occurring irregularly give a rough and nodular contour to the pharyngeal wall.

The succeeding well-defined form is the "nodular" or "granular" variety of pharyngitis—the posterior wall is *light colored and yellow* in appearance, and (from the destruction of follicles, the irregular atrophy of glands, and deposit of new connective-tissue) its surface is nodulated and granular. This stage gives yet more marked symptoms of impaired function and is usually progressive. Ultimately, as the result of very advanced nasal sclerotic changes or true atrophic nasal catarrh, we find complete destruction of all the glandular and follicular elements of the pharynx; the posterior wall consists of a simple membrane of new-formed fibrous tissue resting upon the bodies of the vertebræ, and the appearances of true *pharyngitis sicca* obtain; viz., extensive "absorption" or atrophy, the pharynx has a cup-shaped appearance, and its cavity is greatly enlarged, the pharyngeal wall is dry, puckered, red, and shining, and usually deeply congested from crust irritation. The symptoms of this stage of pharyngeal inflammation are usually marked and grave; the patient complains of hacking cough, of the accumulation of dry crusts within the pharynx, pain and discomfort, and the larynx will be found to show a deeply congested and often abraded mucous membrane on examination, and laryngeal cough is the rule.

Although occurring but rarely, there are occasional exceptions to the regular sequence of chronic pharyngitis to nasal catarrh; frequently recurring attacks of acute sore throat may spur on the pharyngitis so that it undergoes more rapid changes for the worse than the rhinitis present; and in dyspeptics the course of chronic sore throat is more rapid than in patients in whom the digestive tract is in a normal condition. Patients who work in a dust or chemical-laden atmosphere, and who are compelled by nasal lesions to breathe mostly through the mouth, show very rapid progressive pathological changes in the throat. The sequence, is, however, so well marked and reliable that but few errors need be made in diagnosing the stage of chronic pharyngitis present from an examination of the anterior nares.

Why the pharyngeal condition so closely follows the various stages of intranasal inflammation is not easy to determine; four causes are at work: extention of the inflammatory disease by continuity; irritation and septic influences from the flowing of abnormal nasal mucus over the pharyngeal tissues; mouth-breathing from nasal stenosis; and irritation from hawking, coughing, and forcibly blowing the nose to get rid of abnormal secretions. Their importance is in the order of their enumeration.

It is, of course, not intended here to deny that some or all of the many causes of chronic pharyngitis enumerated by authors may not have important etiological relations to the disease; a cause not often recognized is the use of various "hot" condiments and sauces, which cause a most marked pharyngeal hyperæmia in many individuals, with consequent infiltration of small cells. The use of undiluted alcohol is also a prominent causative factor in many cases. I have certainly seen fewer cases of chronic sore throat due to a vicious use of the voice, than to badly chosen treatment received for a trifling pharyngeal inflammation at the hands of physicians.

The remote results of advanced pharyngeal inflammation, associated as it is with grave intranasal lesions, are not infrequently of serious import. Nearly all cases of the atrophic type complain of "chest fretting," and a slight degree of chronic bronchitis is frequently found; great susceptibility to acute attacks of bronchitis and "winter cough," is the rule. Whatever be the relations of the same, it is also certain that a large proportion of patients with atrophied pharyngeal tissues are anæmic, dyspeptic, and generally below par. Great impairment of voice is an almost necessary result, and various local hysterical phenomena are very common.

Otologists usually consider inflammation of the lower pharynx as standing in an important etiological relation to chronic catarrhal deafness, and usually place considerable weight on the results of an examination of the lower pharynx in prognosis. While this is certainly the case, it is probable that could a grave chronic pharyngitis exist while the nares and the region of the pharyngeal tonsil remained fairly normal, no aural symptoms would obtain, inflammation of the lower pharynx tending neither to obstruct the orifices of the Eustachian tubes nor to extend to them by continuity. If great sclerosis has occurred in the lower pharynx, it is safe to argue that a similar condition exists in the lower portion of the Eustachian tubes, and, perhaps, even extending into the middle ear, but this is due to the inflammation of the pharyngeal vault, and not to the secondary disease of the lower throat. The upper pharynx belongs pathologically to the nasal region and is not under discussion here.

The *local treatment* of chronic pharyngitis, except in the earliest stages, is very unsatisfactory; applications made directly to the pharyngeal mucous membrane are nearly worthless, except to relieve symptoms, and possibly, if long continued to arrest the disease. Atrophied glands, degenerated lymph follicles, new-formed connective tissue, cannot be replaced by any treatment known or likely to be discovered. Treatment must be directed to the nasal cavities to be of avail; if the rhinitis be cured—so far as destruction of tissue permits—the pharyngitis will improve and the symptoms cease. Painting the pharynx with mineral and vegetable astringents, iodine, etc., if gently and thoroughly carried out, will often markedly relieve symptoms, and is still largely used at the Philadelphia Polyclinic. In the early stages of the disease a spray of potassium bromide (10 to 20 grains to the ounce) is of value; in more advanced cases I use applications

of tincture of sanguinaria or galanga properly diluted with glycerine; in yet more advanced stages *liqueur de Villate* diluted with water, or one or other of the thymol solutions suggested by me are most useful. Various other well known solutions have been found valuable in selected cases; a 10 grain solution of crystal *hydrastin* has been used by us with benefit in "nodular" pharyngitis. In all cases better results will be obtained if the entire pharyngeal region be sprayed clean with some alkaline and antiseptic solution; formulas of which for use in private practice may be made very elegant and agreeable. The faradic current used two or three times a week, the positive pole being placed directly on the pharyngeal mucous membrane, and the negative over the larynx or angle of the jaw, is of the greatest value. It requires care and judgment in its manipulation, or quite as much harm as good may result.

Operative procedures have not proved satisfactory in my hands; the destruction of enlarged follicles by chemicals or electro-cautery only appears to hurry on the dreaded atrophic changes, except where individual follicles have undergone cystic changes, when their careful obliteration is expedient. Obliteration of varicose veins occasionally relieves symptoms, various local hysterical phenomena having been cured by some writers by this treatment. If properly done, it is safe and of value, although I have never seen cause to ascribe much symptomatic importance to the dilated vessels, regarding them as a necessary result of the general condition. When softened lymph follicles are found they may be incised and the resulting raw surface touched with ordinary tincture of iodine; less atrophy and scarring take place when so treated than if allowed to run their course undisturbed.

Internal treatment should be directed more to the nasal lesions than in hopes of directly affecting the pharynx. Strychnia and chloride of ammonium have proved the most useful drugs in my hands; the former is usually given in combination with phosphoric acid; various other medicines are doubtless of great use in selected cases. Outdoor exercise and "training" under a competent instructor are of enormous value in this, as in all diseases of the respiratory tract.

Although a *cure* of advanced chronic pharyngitis cannot be hoped for, by prolonged and well-directed treatment all symptoms may be relieved, the disease arrested, and if the patient is seen and treated from time to time no further trouble need be apprehended. In all cases the whole body must be interrogated for remote causes, violent pharyngeal symptoms being not seldom dependent on lesions of the digestive or genito-urinary tracts, a cure of which is imperative before the throat symptoms can be relieved. The well known hygienic methods of "strengthening" the throat should never be forgotten or neglected after convalescence is established.

In treating any case of pharyngeal or laryngeal inflammation the positive causative relation of the nasal lesions must not be overlooked, and in direct relation to the success attained by intranasal therapeutics will be the improvement in the *chronic pharyngitis*.

49 N Seventeenth St, Philadelphia.

A NEW HEART TONIC, STROPHANTHINE.

By THOMAS J. MAYS, M.D.,

Professor (adjunct) of Diseases of the Chest in the Philadelphia Polyclinic.

Strophanthine is obtained from the seeds of *Strophanthus hispidus*, which, according to "Just's *Botanic Annual*, is an exogenous creeper, belonging to the Apocyneæ, climbing the highest trees, and which is indigenous to the valley and mountain forests of equatorial Africa. The seeds are ground and formed into a paste by the natives of Africa, and this preparation they employ to poison their arrow-points. The poisonous property, which undoubtedly resides in the strophanthine, is very active, and is thus used for the purpose of procuring food, and as a means of defence against enemies.

The strophanthine which is manufactured by Merck, and which we employed, is a white crystalline powder which melts at about 365° F., and evaporates without leaving a residue. It has a feebly acid reaction, and is very soluble in water. Its general physiological action, as worked out by Dr. Fraser, of Edinburgh, is that of a muscle-poison, with a special affinity for the cardiac muscle. In small and appropriate doses it has a most decided beneficial action on the heart. It readily subdues an excited pulse, and does not seem to give rise to the cumulative effects, or to the digestive troubles which follow the administration of digitalis. Its action is principally confined to the heart, and even the bloodvessels are said to be uninfluenced by it. We have administered this agent in a number of cardiac affections, and, so far as our experience goes, believe it to be a very valuable therapeutic measure, as the history of the three following cases will demonstrate.

Case I.—Mrs. A., aged seventeen, consulted us July 21, 1887, for a pain in the back, palpitation of the heart, and pain over cardiac area, and for this we prescribed quinia, iron, and ammonia. On the 3d of August she returned no better, dyspnœa, cardiac pain, and palpitation continued, pulse 120. Treatment: Strophanthine $\frac{1}{100}$th grain every three hours. 4th. Pulse 112. Same dose every two hours. 5th. Pulse 104. Much better. Same dose every hour and a half hours. 6th. Very much improved, $\frac{1}{48}$th of a grain every three hours. Dyspnœa gone and feels very well. Pulse 80. This was the first case in which we gave the drug, and it is very evident that we began with doses which were too minute.

Case II.—*Subclavian aneurism.* J. B., aged forty, laborer. Was first seen July 19, 1887, when he complained of cough, expectoration, much dyspnœa and poor appetite, and frequent pains shooting down left arm, for about one year. Had chancre twelve years ago. *Physical signs:* Dulness on percussion below clavicle from sternum to shoulder-joint. Loud systolic bruit and a very perceptible thrill imparted to the finger over same region. Bruit propagated over the whole cardiac area and into the axilla but

not into the carotid, and its maximum intensity existed at junction of first left intercostal space with sternum. There was marked weakness of left radial pulse. Gave him four grains of iodide of potash every four hours. August 22d. No better. Trinitrine one drop of one per cent. solution three times a day. Sept. 4th. Cough, pain, and dyspnœa very much worse. $\frac{1}{75}$th of a grain of sulphate of atropia and two drops of tincture of aconite root every three hours. Sept. 6th. No better. $\frac{1}{64}$th of a grain of strophanthine every three hours. 8th. Better. Appetite improved, dyspnœa and pain less. 13th. Better. Same treatment. 16th. Very much better, same treatment.

Case III.—*Aortic regurgitation.* W., aged thirty-five, married, first came under observation August 19, 1887, when she was suffering from cough, whitish, tough expectoration, dyspnœa so marked that she was unable to lie down. Had hæmoptysis nine months ago, œdema of lower extremities, and was losing flesh. Had rheumatism. Aortic diastolic murmur, mucous râles at bases of both lungs. Administered quinia, iron, and ammonia. August 22d. No better. Five drops of digitalis tincture every three hours. 24th. Somewhat better, but unable to lie down, $\frac{1}{64}$th grain of strophanthine every four hours. 15th. Much better. Dyspnœa improved and she is now able to lie down at night without difficulty. 26th. Still improving. Œdema in lower extremities has disappeared. Same treatment. Oct. 1st. With the exception of some rheumatic pain in her arm she feels comparatively well.

1829 Spruce Street, Oct. 1, 1887.

AN APPARATUS FOR THE QUANTITATIVE ESTIMATION OF SUGAR IN THE URINE.

By S. P. KRAMER, M.D.,
of Cincinnati.

The fermentation test for sugar in the urine has long been considered the most certain and reliable test; it is the one to which recourse is had when others fail.

If, then, we could secure for the quantitative estimation of sugar an apparatus at once accurate, simple, reliable, and inexpensive, we would then have a saccharometer useful to, and attainable by any practitioner.

The apparatus devised by Dr. Max Einhorn,[1] consists of the fermentation tube described by Salkowski and Leube.[2] It consists of a bent-glass tube, the long arm of which is graduated, of about five cubic centimetres capacity. The short arm ends in a bulb, which acts as a reservoir to retain all the overflow. The test is made in the following manner: A gramme of fresh commercial compressed yeast is thoroughly shaken up with ten cubic centimetres of suspected urine. This is poured into the reservoir, and the long arm and bend of the tube are filled by inclining the apparatus and allowing the urine to flow in and displace the contained air, the pressure of the atmospheric air retaining the urine in the long arm. The apparatus is allowed to remain undisturbed at the ordinary temperature of the room (70° F.), for a period of twenty to twenty-four hours. The sugar, if there be any present, will then have fermented, having been converted into carbonic acid gas and alcohol. Part of the carbonic acid gas passes up into the graduated long arm, and part escapes into the outside air. Now, by a number of experiments, Dr. Einhorn has determined the volume of gas corresponding to a given percentage of sugar in the urine, and the tube is graduated by the results of these experiments. But with more than one per cent. of sugar the entire long arm of the tube is filled with gas, and all the urine is forced into the reservoir, giving off its carbon dioxide to the outside air; so that we cannot ascertain if the urine contain more than one per cent. of sugar. To obviate this, it is necessary to dilute the urine sufficiently to bring the amount of gas evolved within the capacity of the instrument. After the reaction has been completed the amount registered on the graduation is multiplied the same number of times as the urine was diluted.

While the apparatus is exceedingly simple, it admits of several sources of error.

In the first place, since the instrument is graded by the results of a number of experiments and not by an exact chemical calculation, the graduation itself must be in some degree deficient. Then under different degrees of temperature and pressure, the volume of gas in the tube and that given off, varies so that the error due to variations in temperature and pressure is multiplied; the amount of gas absorbed by the urine also varies under different conditions of temperature and pressure. Then there are the inconvenience and inaccuracy resulting from diluting the urine; and moreover, since nearly all diabetic urine contains more than one per cent. of sugar, the urine must be diluted in nearly all cases, and any error either in the graduation or volume of the gas is multiplied the same number of times as the urine was diluted.

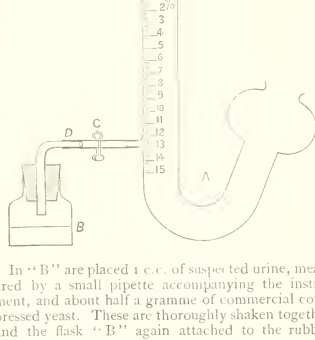
The following apparatus seems to answer all the requirements, both as to simplicity and accuracy. The aim has been to collect and measure all the gas evolved, while the instrument is graduated by exact chemical calculation.

The apparatus (see figure) consists of a bent tube "A," the long arm of which is graduated, while the short arm ends in a bulb. From the side of the long arm there is projecting a nipple. To this is attached air-tight, by means of rubber and glass tubing, the fermenting flask "B." Fitting over the rubber tubing is a brass clamp "C." The test is made in the following manner: To about 50 c.c. of water are added a little bicarbonate of soda and nitric acid. Effervescence takes place, carbonic acid gas being given off, and saturating the water with carbon dioxide. This is allowed to remain undisturbed until effervescence has ceased. The clamp "C" of the apparatus is then closed, and the flask "B" removed by separating the glass and rubber tubing at "D."

The long arm and bend of the tube "A" are filled with the water previously saturated with carbonic acid gas. This is done by pouring the water into

[1] Medical Record, p. 91, 1887.
[2] Salkowski and Leube, "Die Lehre vom Harn," p. 223.

the reservoir, inclining the tube, thus allowing the water to run in and displace the contained air.



In "B" are placed 1 c.c. of suspected urine, measured by a small pipette accompanying the instrument, and about half a gramme of commercial compressed yeast. These are thoroughly shaken together and the flask "B" again attached to the rubber tubing at "D."

The clamp "C" is opened, and the apparatus is allowed to remain undisturbed at the ordinary temperature of the room, for a period of twenty to twenty-four hours.

By this time the sugar, if the urine contain any, will have fermented. The carbonic acid gas passes up and is collected in the long arm of the tube, where the percentage of sugar may be read off on the graduation.

The instrument is graduated in the following way: From the equation: $2C_6H_{12}O_6 = 2C_2H_6O + 2CO_2$, we determine by means of their molecular weights, that one part by weight of glucose yields 0.4889 part by weight of carbon dioxide at 0°C and 760 mm. of atmospheric pressure. Then the number of cubic centimetres of carbon dioxide, obtained from 1 c.c. of urine containing one per cent. of sugar, equals $0.4889 + \frac{a}{100}$, in which "a" is the weight of 1 c.c. of urine, and "B" is the weight of 1 c.c. of carbonic acid gas at the given temperature and pressure.

The instrument is graded by the result of this calculation, so that it is mathematically correct.

Correction is made for the amount of carbon dioxide absorbed by the 1 c.c. of urine; also for the amount of carbonic acid gas produced by the yeast itself, independent of the sugar. Correction is also made for the amount of sugar not converted into alcohol and carbonic acid gas. The instrument is graded to 70° F., and slight variations from this will make a difference scarcely appreciable. The difference in pressure in the two arms of the tube is disregarded: since, in an instrument so small (8 inches) the error resulting therefrom would be so minute as to have no significance.

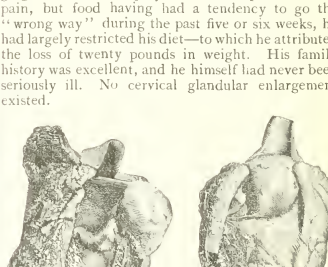
That the apparatus is simple and inexpensive, may be judged from the preceding; that it is accurate is shown by the record of thirteen experiments with a solution containing a known quantity of sugar, which yielded on the production of carbon dioxide an average error of 0.026 per cent., which is so minute as to have no clinical importance whatsoever.

A CASE OF ROUND-CELLED SARCOMA OF THE LARYNX.

By LOUIS JURIST, M.D.,
LECTURER ON LARYNGOLOGY, JEFFERSON MEDICAL COLLEGE; FELLOW OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

On the 29th of August, 1884, Mr. E. D. T., white, aged sixty-five, was referred to me by Dr. Sibbald, of Wissahickon, to determine the cause of an attack of dyspnœa, which had come on the day previous.

On inquiry, Mr. T. stated that his shortness of breath, although of two months duration, had only become severe enough, on the day previous, to lead him to seek medical advice. There was moderate inspiratory and expiratory stridor. His voice, although perfectly clear, was hesitatingly formed and muffled. During the past two years, he had had occasional attacks of sore throat, for which domestic gargles had been employed. He complained of no pain, but food having had a tendency to go the "wrong way" during the past five or six weeks, he had largely restricted his diet—to which he attributed the loss of twenty pounds in weight. His family history was excellent, and he himself had never been seriously ill. No cervical glandular enlargement existed.



Laryngoscopic examination, made without difficulty, pictured a smooth, globular, non-ulcerated growth of grayish tint and dense consistence, about the size of a horse chestnut, springing from the left ventricular band. The amount of breathing space is fairly well shown in the woodcuts. The manipulation, he insisted, gave him great relief.

The danger of suffocation was carefully explained to his sons, and the proposition was made that he should at once enter the Jefferson Medical College Hospital, to have a preliminary tracheotomy performed; this was declined.

The following morning, while at another institution, I was hurriedly summoned to the hospital by a member of his family, who stated that his breathing was much worse, and begged me to operate at once. Shortly before we reached him, he fell unconscious, during a suffocative spasm, in the waiting-room of the hospital, and in spite of an immediate tracheotomy by one of the attending surgeons, Dr. J. W. Hearn, could not be resuscitated.

Only a partial post-mortem was permitted. The larynx and trachea removed. Microscopical examination showed the tumor to be a round-celled sarcoma.

The history, macroscopical appearances, the absence of ulceration, of glandular involvement, correspond entirely with the description of these growths in the latest work on the subject (Butlin, H. T., *Malignant Diseases of the Larynx*) and have an important bearing on the treatment. Keeping before us the inevitable termination of extensive mechanical obstruction of the larynx, from whatever cause arising, and subscribing to the statement that "the evidence at present seems to prove that sarcoma of the larynx neither affects the lymphatic glands, nor produces secondary growths, and that its malignant properties are limited to infiltration of adjoining parts;" laryngectomy, either partial or complete, is clearly indicated.

If, as Butlin claims, "even the worst cases of sarcoma are scarcely to be looked upon as hopeless," the issue in this case is the more deplorable.

To avoid confusion, it may be stated that this is the case referred to in the *International Encyclopedia of Surgery*, vol. v. p. 736.

839 North Broad St.

GENERAL CONCLUSIONS, DERIVED FROM THE STUDY OF THE EYES OF ONE THOUSAND INSANE PATIENTS.

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ASSISTANT SURGEON OF THE PENNSYLVANIA EYE AND EAR INFIRMARY, PHILADELPHIA.

The conclusions expressed in the present paper are derived from the examination and study of more than a thousand cases of insanity, observed either in private practice, or at the Philadelphia and Norristown hospitals. This work has extended over a period of more than four years, and consisted of a thorough eye examination, the ophthalmoscope being employed by the direct method whenever possible, the eye being examined usually with and without dilatation of the pupil; vision for form was taken in all cases; in addition, the ear and pharynx were examined, as it was thought that these examinations might serve as a corroboration to those of the eye. The work was undertaken with the thought that if a sufficient number of patients were examined, it might serve to shed some light upon the pathology of insanity, and it was hoped that, even in a therapeutic aspect, it might prove not unprofitable.

Of course, in the short paper here presented, many points of minor importance evolved during the investigation are omitted, the effort being to indicate the general results obtained, only well-marked characteristics being here presented.

Vision for form, in all conditions of insanity, is practically normal, when we allow for refractive errors, opacities in the refracting media, and unhealthy conditions of the background. Of course, all things being equal, for instance, vision in dementia is not as good as in acute mania, because, as we shall find, in dementia we are dealing with a general degenerative condition, as expressed in the eye by more or less atrophy of the nerve, whereas, in acute mania we usually have present a condition of exaltation, represented by an increased blood-supply in the eye. Then, again, in imbecility, we do not expect to obtain the same vision as we would in other cases, as the want of education, and the frequent impossibility thereof, is a factor to be taken into consideration. In conclusion, we may say that vision for form in the insane is the same as in the mentally normal with similar eye conditions.

The visual fields are very often reduced in consequence of the optic nerve degeneration so frequently found in cases of insanity; this reduction of the field's area differs not in variety or extent from what we would expect to find in similar nerve degeneration in the sane.

The pupils are far more frequently unequal and irregular in outline than in the sane; they are, also, more frequently sluggish, the irides slowly responding; particularly is this the case with the light reflex, the accommodation reflex being more frequently normal. These pupillary variations are more frequent, both in severe acute attacks, as well as in very old chronic cases. In the former we have slowly responding pupils, inclined to dilatation, while in the latter class they are more often unequal and irregular in outline.

Insufficiency of the recti muscles was found to be more frequent in imbeciles and idiots than in the mentally sound, but in the other classes of insane patients this fact was not observed.

Corneal, scleral, lens, and vitreous troubles are met with in about their ordinary frequency.

Choroidal inflammations are very uncommon, except in cases of general paresis.

Choroidal congestion is more common than among the sane; it is often found in connection with retinal hyperæmia, but not unfrequently it is found alone.

In studying the condition of the optic nerve and retina, it will be found best to take up in a connected manner the various forms of insanity. In fact, after studying the eye-conditions among insane patients, one cannot help feeling that there is a very intimate relationship existing between the various forms of insanity; one is led to believe that the three divisions—melancholia, mania, and dementia—are but different stages or phases of the same condition.

We shall find it best to first give the results obtained in cases of acute melancholia, as undoubtedly this is the commencement stage of many, if not all, cases which are found under the classes of melancholia, mania, and dementia.

On examining the eyes of a case of acute melancholia, we find that the fundus almost invariably shows us a condition of retinal hyperæmia, or of congestion; if taken early enough, it is but hyper-

æmia: the vessels, both arteries and veins, are larger than normal; they are often tortuous, with slight increase in the size of the lymph channels; the general appearance of the retina is more red than usual, and the nerve is slightly pinkish. If the case goes on into one of acute mania, we have a more marked increase in the blood-supply, we have a condition of congestion; the vessels are larger, the retina becomes darker in color, while the macula lutea loses its brilliancy, inclining to become a dull red. If the case is sufficiently severe, this condition of things continues increasing in severity, and soon we have retinal effusion, with a decidedly pink nerve. If the case becomes better, the congestion lessens, the effusion gradually disappears, and as the case gets well, the eyes gradually assume their normal condition.

Not infrequently we have, early in a case of acute mania, a condition of atrophy presenting itself; or, again, a swelling of the nerve, with obliteration of its edges (a slight papillitis), resulting in atrophy. These cases are not inclined to recover; they are apt to go into a chronic condition, and are almost invariably incurable. It may be that in the case of acute mania the congestion and effusion remain, becoming no worse, nor yet better. If it continues, we have, sooner or later, an atrophy of the optic nerve resulting. Patients who have had one or more attacks of acute mania, almost invariably present a condition of nerve atrophy in addition to an increased blood-supply. A case of acute mania, becoming one of chronic mania, gradually shows more and more atrophy of the nerve, while the congestion gradually subsides, the effusion being absorbed, the vessels becoming less tortuous, and decreasing in calibre. As the case of chronic mania merges into dementia, we have still more marked atrophy, and now we begin to find that the blood-supply is not only not increased, but that it rapidly diminishes, until, at length, it is less than normal; frequently the vessels in long-standing cases of dementia are very few and very small. When the condition of chronic dementia is fully pronounced, we have a very decided atrophy of the nerve-structure, and a very marked diminution, both in the number and size of the retinal vessels.

There is a distinct and separate class of cases of acute mania which are classed as cases of delusional mania, in which there is almost invariably some heart defect, and we find only a slight degree of hyperæmia of the retina, or else we find the retina perfectly normal. These cases often last for a very long time, year after year the same mental condition is present, they show no progressive eye change. They are not inclined to get well, nor to pass over into dementia, but die usually in their disturbed mental state, from heart disease.

If a case of acute melancholia is becoming better, we find a gradual diminution of the retinal hyperæmia or congestion, the fundus of the eye clears up, and when the patient has recovered, there usually no vestige left in the eye. Cases of acute melancholia which are but very slowly progressive, in which year in and year out there is but little change in the mental condition, show but little or no change in the retinal circulation. Usually there is present a hyperæmia which continues on the same plane. The case may continue year after year, and may go on into dementia later on, when we shall begin to notice the atrophic tendency; if, however, there is a tendency to recovery, we find the eye presenting a subsidence of its abnormal condition, the blood-supply is lessened, the vessels are smaller, and less tortuous.

There is, however, a series of cases of melancholia which from their onset are very mild in character, and remain so throughout, becoming well in a greater or less length of time. These cases very rarely have any eye-change; but, when present, it is of the nature of a very slight retinal hyperæmia, which clears up as the case recovers.

As before indicated, we have in general paresis the majority of the cases of choroidal inflammation. The greater number of cases examined, which have been classed as paralytics, were found to present some syphilitic lesion of the eye.

In imbecility and in idiocy we have bloodvessels whose calibre is greater than normal, the vessels being numerous and tortuous, and the blood-supply is invariably greater than the normal; in addition to this we usually have large optic disks, but they are not of normal color, and seem to present an increased amount of fibrous tissue, showing a poor nerve condition. The macula lutea is usually of a dull red color.

In epilepsy we have present the same conditions, with far less frequency of large optic disks, as in imbecility and idiocy, but it is not so invariable. In addition, we have in epilepsy a more decided tendency to nerve degeneration, and also have an increase in the size of the perivascular lymph channels, and, in many cases, we have retinal effusions occurring.

N. W. COR SIXTH AND GREEN STREETS, PHILADELPHIA.

MEDICAL PROGRESS.

CONTAGION AND DISINFECTION.—At the recent meeting of the Society of Prussian medical officials, PETRI, of Berlin, urged that the successful practice of disinfection required a knowledge of the germ to be attacked, and the agency directed against it. As Koch has shown that anthrax is the most virulent of known germs, it may be used as a test. First of available disinfectants he placed carbolic acid in five per cent. solution; two per cent. solution is inert. Sublimate is too poisonous, too easily decomposed, but is useful in disinfecting the unbroken integument. In the schedule of disinfectants of the Berlin Disinfection Ordinance, February, 1887, it is omitted. Laplace has shown that the addition to both carbolic acid and corrosive sublimate solutions of one-half per cent. hydrochloric acid increases their efficacy; a two per cent. carbolic acid solution, with this addition, kills anthrax. In disinfection to destroy the cholera bacillus whitewashing walls with lime was especially recommended. Esmarch has also shown that spores can be removed from walls by rubbing them with stale bread, which should be burned at once.

KOCH, of Berlin, stated that his observations that five

per cent. solution of carbolic acid destroyed anthrax had been confirmed by others. Guttmann's experiments, to the contrary, are not explicit enough nor plainly described. Koch had studied anthrax especially because it was, when he began his work, the best known of infectious germs; he had, therefore, made it a test object, and the germs since discovered give every evidence of a feebler virulence than anthrax. Successful disinfection consists in combating each disease in the special manner required by its individual germ.

In the discussion which followed Schulz advised the addition of potassium soft soaps as an auxiliary means of disinfection to the substances now employed in the Berlin Ordinance.

Philipp, of Berlin, had used Guttmann and Merk's method of disinfection with spray of corrosive sublimate without injury to any one employed in the work.—*Deutsche medicinische Wochenschrift*, Sept. 29, 1887.

Wounds of the Palmar Arches.—Thiriar, of Brussels, summarizes his views in a recent lecture, as follows: The safest and best plan is to ligature in the wound, if possible; if not, above it. In recent cases it can usually be done in the wound. Where it is necessary to tie higher up, it is of no use to tie the ulnar and radial; and if the wound is not very recent, and there has been time for a considerable amount of collateral circulation to have developed, even the brachial must be tied above the profunda. It is necessary to remember that the axillary artery sometimes gives off two brachial branches as high as the axilla itself. M. Thiriar examined a large number of arms in the dead-house when he was in charge of the post-mortems, and found this anomaly present in twelve per cent. of the cases. However, he has always succeeded in arresting hemorrhage in wounds of the palmar arches, even when the tissues were suppurating, by a modification of Sir J. Simpson's plan of acupressure. He uses needles curved to a semicircle, and, passing them under the artery, brings the edges of the wound together, and occludes the vessel by the application of a twisted suture, which there is no need to draw very tightly. He summarizes his advice thus: 1. Direct ligature. If impossible, 2. Twisted suture and acupressure. If unsuccesful, 3. Ligature of humeral in the middle, if the collateral circulation has not had time to develop; above the profunda, if it has. 4. Employment of compression, direct or indirect, forced flexion, forcipressure, styptics, etc., only as temporary expedients.—*Lancet*, October 1, 1887.

Ethereal Tincture of Phosphorus in the Asphyxia of Pneumonia in Children.—Dr. Faria, of Brazil, is quoted by the *Revue Générale de Clinique et de Thérapeutique* of September 22, 1887, as prescribing an ethereal tincture of phosphorus in the asphyxia which occurs in the cases of children suffering from pneumonia. His prescription is as follows:

Aquæ cinnamom.	℥ 25.
Tinct. ethereal. phosphor. . . .	gtt. 8.
Spirit. ætheris	℥ 5.

Sig. Half teaspoonful to spoonful hourly as needed.

The Conveyance of Tuberculous Infection by Expired Air.—Cadéac and Malet are quoted as follows by the *Wiener medizinische Presse* of September 18, 1887:

Their experiments consisted in allowing rabbits to inspire air expired by phthisical patients daily for several hours. Infection did not result. When, however, an irritating substance, like bromine vapor, had caused inflammation of the bronchial mucous membrane before the inhalations, infection resulted. Twelve rabbits and guinea-pigs were kept for two or three months in an atmosphere shared by nineteen tuberculous animals, but without any closer association; none of them was infected. If the non-tuberculous animals were brought into closer relations with the tuberculous, infection resulted. The air expired by tuberculous animals was condensed, and the water resulting was injected into animals. These experiments gave no positive result. The conclusion, however, was reached that secretions and excretions of the phthisical are infectious when they become dried, and, as dust, inspired or taken into the mouth by the common use of food and drinking utensils.

Brouardel on Typhoid Fever.—At the recent Hygienic Congress at Vienna, Brouardel read a paper on the causation of typhoid fever, whose summary is as follows:

He would now seek to show what science had done; and, as an illustration, he selected typhoid instead of cholera, for in the long run it was the most fatal of the two diseases. At Geneva the International Congress was still undecided. Some said that typhoid arose from the fermentation of organic matter; others that a specific germ alone sufficed, without any decomposition of organic matter. The Congress could not agree whether the fever was contagious or only spread by water or the absorption as food, of some other contaminated substance. In 1884 an effort was made to utilize the current of the Rhone as a motive power. A lock was constructed, and this caused some of the drinking water supply to flow backward toward the mouth of a sewer. Some months previously this sewer received the dejections from two or three isolated cases of typhoid fever. In a few days after the contamination of the water supply a serious epidemic broke out in Geneva, and there were no less than 500 cases. Last year at Clermont Ferrand and Mont Ferrand there were 300 cases of typhoid due to water contamination, while such places as Chamavière and Royat, though close by, escaped, their water being derived from a different source. In Paris, whenever the supply of the pure water from the Vannes or the Dhuys fell short, and the waters of the Seine, the Ourcq, or the Marne were used instead, the hospitals were filled with patients suffering from typhoid fever, precisely three weeks after such alteration in the character of the water supply. Studying the question from the bacteriological point of view, Dr. Brouardel showed that the multiplicity of microbes rendered this investigation very difficult. After five years it was found that a few drops of carbolic acid in a culture broth had the property of killing all these microbes with the exception of the special microbe of typhoid fever. This latter developed so slowly that it escaped the action of the acid. In the examination of the waters the same process was used: and now it was possible to say definitely that such or such a substance contained the real

germ of typhoid. At the same time he was not prepared to say that typhoid could never arise merely from foul air. In a family of mine, living on identically the same food, the sons alone contracted typhoid fever. It was found that under his room window there was an open soil pipe. In another family precisely the same incident occurred, and this among his own patients, and quite recently. Nevertheless water was the more general cause of the disease. He concluded by urging that it was more easy to cover water than to protect open rivers or canals from contamination. Water ought to be brought to large towns in pipes or closed aqueducts. If we thus protected the health of the great centres, the rural districts would also largely benefit, as their epidemics were very often imported from towns.—*Lancet*, October 1, 1887.

INTRACRANIAL SARCOMA; REMOVAL; RECOVERY.—DURANTE, of Rome, reports the following case in the *Lancet* of October 1, 1887:

The course of the disease, the loss of memory and of the sense of smell, and the objective and subjective state of the patient led me to believe in the presence of a tumor within the cranium, the pressure of which affected the anterior lobe of the brain and paralyzed or destroyed the olfactory nerve. Moreover, the displacement of the globe of the eye led me to believe also that the tumor had penetrated the superior arch of the orbital cavity. Such being my diagnosis, I proposed to the patient an operation that would remove the offending object, explaining to her the gravity of the operation without reserve. She was brave, and she consented.

To reach the tumor it was necessary to make a large opening in the left frontal bone; so with an incision commencing from the inner angle of the left orbit upward nearly to the hair line as far as the temporal region, I raised all the soft tissue from the bone in a flap. The bone being exposed, with a sharp scalpel and hammer I removed a large portion of it, commencing at the superior orbital margin, inferiorly, and found that the internal parietes of the frontal sinus had been forced outwardly. The dura mater being now exposed, I examined it, and found that it had been perforated by the tumor just opposite the frontal eminence. With great care I now began to scoop out the tumor. As soon as a considerable portion of the tumor was removed, I detected that it did not adhere beyond the internal surface of the dura mater, and that therefore its enucleation was comparatively easy; and then removed it and carried with it all the adherent portions of the dura mater. The hemorrhage was slight and easily controlled by the hæmostatic, a tampon treated with sublimate. The tumor was lobular, of the size of an apple, and weighed seventy grammes (about two ounces). It occupied the anterior fossa at the base of the left cranium, extending to the right and upon the cribriform lamina, which it destroyed. Posteriorly it extended to the glenoid tubercles before the sella turcica. The left anterior cerebral lobe was greatly atrophied; the orbital arch was much depressed, but not perforated by the tumor as I had anticipated. Having stopped the bleeding completely, I now united the wound by first intention, leaving in the cavity occupied by the tumor a drainage-tube, which descended to the left nasal fossa through the opening made on the ethmoid by a prolongation of the neoplasm; then I closed the nasal cavity with an iodoform tampon. The operation lasted about an hour. The patient bore the chloroform very well, showing only the weakness following the use of an anæsthetic and attendant upon loss of blood. On the third day she had fairly recovered, and the wound was healing without suppuration. The drainage worked well, a large quantity of serum tinged with blood flowing through it. On the fourth day, however, the patient was overtaken by sudden prostration, was inclined to sleep, exceedingly disinclined to talk, and complained of mental confusion. I then discovered that the drain had stopped during the night, so I at once removed the tampon, replacing it, however, further down the nasal cavity. The effect was good; the serous fluid began to drip again. Not satisfied with this, I applied a gum-elastic "pump" to the external opening, and drew off about an ounce of liquid. The flow was thus reëstablished, and continued all the following day and night. On the renewal of the flow the alarming symptoms disappeared as if by magic. On the seventh day I removed the stitches and the drainage-tube, and on the fifteenth day the patient returned to her home, doing very well. She had lost that sensation of vacuity around her person which made her uncertain in her movements, but had not regained her memory or the sense of smell.

Three months after I presented my patient to the Chirurgical Society at its meeting in Perugia, in 1884. She was in a happy frame of mind, and willingly related her experience. She stated that now all her faculties and mental conditions were normal, and that she had even regained her sense of smell. This greatly surprised me, for I felt sure that I had destroyed the left olfactory in removing the tumor, which had destroyed the cribriform lamina of the ethmoid. Upon experimenting, however, with aromatic substances, we found that she could only smell with the right, and that the left was totally insensible, its olfactory having been destroyed either by the pressure of the tumor or by the operation itself. The part of the bone which had been removed was now partially reproduced, the cavity in the region of the operation had now disappeared, and the eye had regained almost entirely its normal position. The tumor, under the microscope, presented a multiform fibro-cellular structure of sarcoma.

It is now four years since that operation was performed, and my patient is in perfect health. My diagnosis and the operation, apparently so hazardous at the time, are therefore justified by the result. And, though such operations have generally failed, the success of mine should secure proper consideration at the hands of modern surgery.

A USEFUL APPLICATION FOR DIPHTHERIA.—SIMON applies the following, hourly through the day, with a camel's-hair pencil to the throat of a diphtheritic patient:

Acid. salicyl.	gr. 8.
Decoction of eucalyptus . . .	℥ 15.
Glycerine	℥ 7½.
Alcohol	℥ 3.

As the decoction of eucalyptus is not commonly used in America, the tincture or oil may be employed, in proportionate strength.—*Revue de Clinique et de Thérapeutique*, September 29, 1887.

The Protection of Water Supply.—Hueppe of Wiesbaden, advised the following measures, at the Congress of Hygiene, at Vienna:

1. Protection of springs by proper walls from surface water; they should be as far as possible removed from cesspools.

2. Inspection and proprietorship of sources of water supply by a central bureau.

3. Inspection of potable waters by this bureau, with the effort to procure water naturally filtered through proper soil, and from deep sources of origin.

4. The intelligent use of sand filtration. (Thiem's method was commended.)

5. Uninterrupted and vigorous use of proper "water works." Prevention, in every possible way, of water stagnation.—*Deutsche medicinische Wochenschrift*, September 22, 1887.

A Preparation for Burns on the Eyeball.—Mr. Flanagan, Pharmacist to the Massachusetts Eye and Ear Infirmary, recently compounded the following to meet the want of a surgeon in a case of burn of the eyeball:

Atropine (uncombined alkaloid)	.	0.10 part.
Cocaine " "	.	0.05 "
Oleic acid	.	1. "
Olive oil	.	9. "

The alkaloids are dissolved in the oleic acid by the use of a water bath, and the solution is then added to the olive oil, warmed. A preparation was tried in which chloroform was used in place of the oleic acid, but the mixture proved more irritating to the affected parts.—*Pharmaceutical Record*, September 20, 1887.

Cold Affusion in Lightning Stroke.—Dr. Hidalgo, of Mexico, brought before the Academy of Medicine of that city, at a recent meeting, the case of a man who was struck by lightning, and was at first thought to be dead, but who, after having had, at the suggestion of a passer-by, a large quantity of cold water thrown over him, began to show signs of vitality. He did not at first receive any medical treatment, so that the early history of the case had to be obtained from the relatives. After being brought home, water was still poured over him until he spoke for the first time, saying he was cold, and begging that this treatment might be stopped. He was then put to bed. During the night he did not sleep, but kept talking in a delirious manner, and complaining of pain, especially in the head. When asked what was the matter, he said at one time that he had something the matter with his chest, and at another that he had rheumatism all over, but he made no reference to the lightning.

Dr. Hidalgo saw him the next day, and found him in a semi-comatose state. The pulse was 75, full and compressible, the temperature normal, the respiration rather rapid. He was so deaf that he could only be made to open his eyes by shouting close to his ear. The pupils were contracted. He complained of pain all over, but especially in the head and arms. He had passed three badly smelling liquid stools during the night. He was neither hungry nor thirsty. The electric spark had entered the right parietal region, just behind the auricle. The scalp was burned over a surface of about four by five centimetres, and a spot of dried blood was seen on the upper part of the auricle. The right side of the neck was reddened as by a burn of the first degree; below this, as far as the umbilicus, the effects were equal to those of a burn of the second degree, of the width of about fifteen centimetres at most, but very irregular in its dimensions. The electric fluid had passed down the inner aspect of the right leg, producing a burn of the second degree. It had then passed down to the foot, where the burn was of the first degree, and the strip of skin affected much narrower than above. The hat, coat, and trousers were injured—as if torn—all along the course of the current, but they were not burnt in any part. The patient was treated with sedatives and some clysters, and in sixteen days was perfectly well.

Dr. Hidalgo supposes the pneumogastric was affected by the shock, which paralyzed the respiration, and subsequently the heart's action, similarly to the behavior of an overdose of chloroform. The indication, therefore, was to reëstablish the respiration, and this was admirably fulfilled by the cold affusion, which fortunately was administered quickly, before the paralysis of the heart had become absolute.—*Lancet*, October 1, 1887.

Stomatitis.—The following is the formula for a gargle, recommended by Monin in this affection:

Acid. boric.		
Acid. salicyl.	.	āā gr. 15.
Potass. chlorat.	.	ʒ 2.
Glycerin.	.	ʒ 12½.
Essent. myrrh.	.	gtt. 16.
Aquæ aurant. flor. . . .	.	ʒ 9¾.

Sig. Use as a gargle.—*L'Union Médicale*, September 24, 1887.

The Temperature of Food given to Invalids.—In the *Wiener Klinik* for September, 1887, Uffelmann, of Rostock, states the following conclusions of his observations upon the temperature of foods for the sick:

1. Cold food and drinks lessen body temperature; the lowered temperature is a genuine loss of heat.

2. The ingestion of cold substances lessens the irritability of the diseased stomach.

3. Cold substances ingested raise the tone of the stomach, increase intestinal peristalsis, promote the passage of stools, and, in dysentery, for example, cause an increase of pain.

4. Cold food and drink increase the liability to cough.

5. Warm foods raise bodily temperature slightly, and promote perspiration.

6. Hot foods and drink are more stimulating than cold.

7. When often given, hot foods lessen the tone of the digestive tract and the vessels of the abdomen.

The Comparative Value of Malt Extract and Beer.—Dr. Townsend, in the *Boston Medical and Surgical Journal* of October 13, 1887, summarizes his studies upon this question, as follows: The small amount of alcohol in the malt extract is due to the presence of the tincture of hops. A glass of beer and a tablespoonful of the malt are practically of the same nutritive value as far as the sugar is concerned, while the tablespoonful of malted wheat or Liebig's food contains one-third as much again of sugar; but the latter

two are superior to beer in nitrogenous substances, the malt containing more than three times as much, and the Liebig's food more than seven times as much; and they are also superior to beer in the inorganic salts, the malt having nearly four times as much, while the Liebig's food has nearly five times as much. Beer, of course, contains alcohol in addition. The superiority of the Liebig's food in nitrogenous substances and minerals makes it preferable to malt, if the diastatic power of the latter is to be disregarded, by taking it directly into the stomach.

By way of summary, it may be said that although malt by reason of its contained diastase is able to convert starch into sugar in a watery medium at the temperature of the body, it has no power over starch in the living stomach, owing to the presence of the gastric juice. Administered directly by the mouth, therefore, it is of use only on account of its contained nutriment, and is inferior in the amount of nitrogenous and inorganic principles to a food formed by the action of diastase on wheat—that is to say, to Liebig's food.

EPITHELIOMA OF THE EPIGLOTTIS; REMOVAL; RECOVERY.—DR. MYLES, clinical assistant to Sir Morell Mackenzie, describes the following case in the *New Orleans Medical and Surgical Journal* for October, 1887:

Mr. D., aged about fifty-four, consulted Dr. Mackenzie in the summer of 1886, suffering from a greatly relaxed uvula and general congestion of the throat. The larynx was perfectly healthy. Dr. Mackenzie amputated a portion of the uvula, and after a few weeks the throat became perfectly healthy.

In the middle of November, 1886, he began to suffer again and consulted his ordinary medical attendant. His attendant used a laryngoscope and found general congestion. In the spring of 1887, as he was still suffering with his throat and great dysphagia, he consulted several specialists, and a growth was discovered on the epiglottis. At the end of May Mr. D. returned to Dr. Mackenzie, who found the epiglottis invaded in every part, both surfaces and edges, by papillary formations. These growths did not merely project from the mucous membrane, but the epiglottis had entirely lost its contour, and appeared to have undergone papillomatous degeneration. A small piece of the epiglottis was removed, and microscopic examination failed to show any distinct cancerous element. The patient had become very much emaciated, and was decidedly weak; of course, the question arose whether constitutional debility was due to cancerous cachexia, or whether it resulted from diminished supply of food, caused from constant pain in swallowing.

Having seen many cases in which the epiglottis had been entirely destroyed without any inconvenience to the patient after cicatrization had taken place—Dr. Mackenzie determined to remove the entire epiglottis. Accordingly, on June 22d, after making several applications of cocaine, Dr. Mackenzie operated with his epiglottome. This instrument resembles a tonsillotome.

The epiglottome is eight and one-fourth inches in length, the curved portion passing downward being about three and a half inches in length. Near the proximate end is a strong wooden handle, fixed at an angle of about sixty degrees to the horizontal portion. The instrument in other respects is exactly like Dr. Mackenzie's ordinary tonsillotome, and, as in that instrument, the cutting blade is pushed forward by the thumb being forced through a metal ring.

The patient being placed in the ordinary laryngoscopic position, Dr. Mackenzie, guided by the laryngeal mirror, placed the loop of the instrument over the epiglottis, then laying aside the laryngeal mirror he seized the tongue himself and pressed the instrument home. From experiments which Dr. Mackenzie had previously made with a blunt instrument he had found, that if he allowed the patient to hold his tongue himself the instrument always slipped off. In fact it is necessary for the operator to press the instrument very firmly against the base of the tongue, whilst at the same time the tongue itself, in order to get a sufficient resistance to effect clean section, is dragged forward by the left hand of the operator and securely held. No pain was felt in the operation, but cocaine was again liberally applied to the base of the wound, and an hour after the operation, when the bleeding, which was very trivial, had ceased, one-fourth grain of morphia was applied to the cut surface.

The patient passed a good night, and the next day was able to swallow solids easily. Liquids passed into the larynx and gave rise to coughing. After the third day the patient was able to swallow as well as he did before the operation.

Since that time the patient has steadily improved, and in the latter part of July was able to swallow without any difficulty.

SACCHARIN FOR DIABETES.—FISCHER, of Berlin, has devised pastilles after the following formula:

Saccharini	gr. 45.
Natrii carbon. sicci.	gr. 30.
Manniti	3 12½.

For 100 pastilles.

One of these may be used to sweeten a cup of coffee, tea, or cocoa.—*Deutsche medizinische Wochenschrift*, September 29, 1887.

PARTURITION IN PRIMIPARÆ OLDER THAN THIRTY.—ECKHARDT has investigated 543 cases of births in primiparæ above thirty in Schröder's clinic, and concludes that parturition at this comparatively late period of life is caused by late coitus or disease of the woman or man. The rigidity of the tissues in these patients causes prolonged labors and wounds of the genitalia. Diseases and complications of pregnancy are more frequent with these patients than with other primiparæ. Placenta prævia; prolapse of the cord; contracted pelvis; breech presentation, face presentation, and twins are more frequent than in young primiparæ. The children of such women are smaller than those of younger women. Retained placenta and uterine atony are more frequent than in others. With women between thirty and forty male children predominate over female; with women over forty female children are in excess. It is comparatively rare to find children with hard, well ossified crania among old primiparæ.

Realizing the fallacy of laying too great stress on statistics, Eckhardt forms no theories on the results of his investigations.—*Centralblatt für Gynäkologie*, October 1, 1887.

THE MEDICAL NEWS.

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SATURDAY, OCTOBER 22, 1887.

THE OSTEOGENIC FACTORS IN THE DEVELOPMENT AND REPAIR OF BONE.

UNDER the above caption, DR. WILLIAM MACEWEN, of Glasgow, presents an interesting and important contribution, in the October number of the *Annals of Surgery*. There are but few persons who are entitled to speak with so great authority in regard to surgical affections of the bones, and any communication from him in regard to their pathology and surgery is sure to attract attention. In the present article the observations are physiological, and in a measure experimental, and have a most important practical significance. Of late years it has been the custom to seek the elucidation of obscure problems in medicine or surgery, by experimentation upon animals, but in the present case the observations are of a clinical nature, and the experiments have been performed upon men. Although the article is not yet finished, we feel justified by its importance in calling attention to it.

It has long been held that bones grow in length from the epiphyses, and in thickness from the periosteum, and that the destruction or removal of the periosteum results in a necrosis of the subjacent layers of bone. The periosteum was, therefore, considered to be the main factor in the reproduction of bone; indeed, certain experiments have shown that the periosteum may be transplanted into a remote locality, and result in the formation of a plate of bone. As an illustration of the fact that the periosteum is a bone-forming membrane, we have the numerous instances where the long bones have necrosed as the result of injury or inflammation, and the continuity of the shaft has been restored by means of an involucrum formed by the detached periosteum, but not infrequently no such result follows; and the work of Dr. Macewen is intended to elucidate the fact that the periosteum plays a much less important rôle in the development and repair of bone than is generally believed.

The article consists chiefly of certain propositions which are dogmatically stated, and the proof of which is subjoined in a series of clinical observations. These propositions begin with simple statements which will be accepted almost without comment, and gradually lead up to observations of a more complex character. Proposition A states that when the periosteum has been mechanically detached from an extensive area of an adult healthy bone, and replaced after the lapse of some hours, union between the bone and the periosteum can take place without sloughing or observable augmentation following. This proposition requires but little argumentation for its proof; such cases are not infrequent, and the most important requisites are cleanliness, asepticism, and accurate apposition.

Proposition B deals with inflammatory separation of the periosteum, and states that after the withdrawal of inflammatory products, reunion between the periosteum and bone may take place without necrosis ensuing; showing that the temporary separation of the periosteum from the bone, even as a pathological result, is not necessarily attended by death of the bone

Proposition C holds that the periosteum covering a portion of bone may be completely destroyed or permanently removed, yet the denuded bone may not only retain its vitality, but may throw out cells which will cover it, and form a new periosteum. It is substantiated by a number of observations of the most convincing character.

Proposition D goes still further, and maintains that a portion of bone which has its continuity severed on all sides, and at the same time has had all its periosteum removed, is capable of living and growing. This is a very important observation, since it has a direct bearing upon fractures with comminution. The fragments should be kept disinfected, and reimplanted, and frequently a good result is obtained; in this way a cure is possible, of severe fractures, trephining operations, etc. The fragments should be quite small, from a quarter to an inch in diameter.

Proposition E goes still further, and is the most interesting conclusion of the article as far as it is yet published. It is that not only do detached portions of bone, deprived of the periosteum, live when reimplanted in their original position, but such portions are capable of living after transplantation. Parts of deeper layers of bone which had no periosteal connection have been transplanted, and have lived and grown. The proof of this statement is found

in a case of necrosis of the humerus, in which no regeneration of the bone occurred, the arm remaining perfectly helpless and useless. A space of two inches separated the two portions, and this was overcome by bone grafts from a cuneiform osteotomy, with the result of filling in the hiatus, and restoring the arm to a marked degree of usefulness. In this particular case the periosteum had been preserved, but without the production of a new bone, and the grafting was undertaken after the lapse of fifteen months, the patient having returned to have the limb amputated.

If it be possible to effect an artificial union by means of the insertion of bone grafts, and so overcome gaps in the bones, the art of conservative surgery has made a notable advance. How great a loss of substance may be repaired in this manner, and whether the grafts may be taken from animals, are points not touched upon in this article, but full of interest. There are certain affections which require that portions of the bones shall be removed, and it is to be hoped that at some future time a means will be found for remedying the defects which have been made. The recent removal of a portion of the inferior maxilla has served to impress these reflections upon us. Will it ever be possible, in such cases, to transplant a corresponding piece from another person or an animal, and in this way restore the continuity of the jaw-bone? or could a new bone be formed by the implantation of small bone grafts? In the light of Macewen's experiments this result may not be beyond the realms of expectation.

THE DYSPNŒA OF ASTHMA AND ITS TREATMENT.

The causation of the asthmatic paroxysm is still in dispute, and at least three theories have advocates, more or less zealous. The demonstration of the bronchial muscle gave a firm anatomical basis to the view that the attack was due to its spasmodic contraction. Wintrich and Bamberger hold that such a condition is inconceivable with the enlarged and hyper-resonant state of the lungs during the paroxysm, and they support a theory of tonic spasm of the diaphragm, either alone, or with the other muscles of respiration. A third view, that of Traube and Weber, attributes the attack to swelling and hyperæmia of the bronchial mucosa—through vasomotor agency—similar to that which occurs in the nasal mucous membrane in the early stage of catarrh. At present a majority of the observers are divided in opinion between the theory of spasm and that of hyperæmia with tumefaction.

In *The American Journal of the Medical Sciences* for October, 1887, Fraser, of Edinburgh, relates some interesting observations which support the spasm theory, and have a very practical bearing on the treatment of the attack. It occurred to him to study the auscultatory phenomena during the asthmatic paroxysm in order to ascertain if they could be modified by the action of any agent known to control the contractility of unstriped muscle. Now, it is well known that the most constant and striking physical signs accompany asthma, viz., the dry whistling râles (without any moist sounds) produced in the tubes, either by spasm of the muscle or swelling of the mucosa. If it could be shown that the administration of a remedy known to relax unstriped muscle was followed by a disappearance of the râles and relief of the dyspnœa, a strong point would be made in favor of the spasm theory. This Fraser has done, using the nitrites, whose capabilities of relaxing non-striped muscle in the case of arteries is well known. Eight observations are recorded in which either nitrite of amyl, nitrite of ethyl, nitrite of sodium, or nitroglycerine was given, and the chest carefully auscultated before and after every administration. In each instance, improvement more or less positive followed, and the dyspnœa and sounds disappeared simultaneously. From the well-recognized action of these bodies in reducing the contractility of non-striped muscle, it seems reasonable to attribute the relief to the relaxation of the spasm of the bronchial muscles.

The nitrite of amyl was given in solution, five minims in two drachms of water, or inhaled, ten minims on blotting paper at the bottom of a small glass tumbler. The nitrite of ethyl (nitrous ether) acts well in ten minim doses of a twenty-five per cent. alcoholic solution. Of the nitrite of sodium ten minims of a ten per cent. solution, and of the nitroglycerine five minims of a one per cent. solution were employed. The administration of nitrite of amyl in the asthma paroxysm has long been practised, but the accurate determination of the coincidence of the relief of the symptoms with the disappearance of the physical signs has not before been so closely followed. We believe a combination of the nitrite of amyl, given during the paroxysm, and the nitrite of sodium given continuously, will act more surely than either remedy alone, as the latter gives that permanence which we miss in the action of the nitrite of amyl.

Sir Morell Mackenzie, in an interview in the beginning of the week with a press reporter, reaffirmed the accuracy of his cablegram of last week to The Medical News. He said that the Crown Prince's condition was excellent, and that there was nothing to justify the alarming rumors current with reference to his health.

The fifteenth annual meeting of the American Public Health Association will be held at Memphis on November 8th, 9th, 10th, and 11th. The Executive Committee has selected the following important

topics for discussion: I. The pollution of water supplies; II. The disposal of refuse matters of cities; III. The disposal of refuse matters of villages, summer resorts, and isolated tenements; IV. Animal diseases dangerous to man. The President, Dr. George M. Sternberg, will make an address upon recent work in bacteriology, in connection with private and public hygiene. The Committee on Disinfectants will present a report embodying the researches and experimental work of the committee during the year.

In addition, there will be presented a number of papers upon other important topics, and the meeting gives promise of being of the highest interest.

It is understood that the railroad rates from all parts of the country will be one and one-third fare for the round trip, upon the certificate plan; that is, those attending will pay full fare going and one-third fare returning. A certificate must be obtained from the Chairman of the Local Committee of Arrangements, Dr. G. B. Thornton, of Memphis, Tennessee, which must be filled out by the ticket agent when the ticket for Memphis is purchased. This certificate is necessary to secure the reduced return rates.

At a recent meeting of the council of the College of Physicians and Surgeons of the Province of Quebec it was resolved to recommend the Legislature to pass a law requiring every one, no matter what his qualifications, to pass an examination before the College in all branches of medical study, before being allowed to practise. They also made large additions to the already very stringent preliminary examination in general education.

The *Journal of Morphology*, edited by C. O. Whitman, Director of the Lake Laboratory, Milwaukee, Wisconsin, is announced. It will be devoted to zoölogy, and the first number contains contributions from the leading zoölogists of America.

At the annual meeting of the Montreal Medico-Chirurgical Society, held on October 14th, the following officers were elected for the ensuing year:

President—Dr. James Perrigo.

Vice-Presidents—Dr. Wm. Gardner and Dr. James Guerin.

Secretary—Dr. R. F. Ruttan.

Treasurer—Dr. J. A. McDonald.

Librarian—Dr. T. D. Reed.

Dr. John B. Chapin, Medical Superintendent of the Pennsylvania Hospital for the Insane, has just been elected an honorary member of the Medico-Psychological Association of Great Britain and Ireland.

Dr. W. T. Councilman, of Johns Hopkins University, will read a paper before the Philadelphia Pathological Society, on October 27th, on "Further Investigations on the Malarial Germ of Laveran."

Baron Bernhard von Langenbeck, the "Nestor of German Surgeons," died of cerebral apoplexy at Wiesbaden on September 30, 1887, aged seventy-seven. He studied at Göttingen under his uncle, a famous anatomist and surgeon. In 1848 he was appointed Professor of Surgery at the University of Berlin, and Director of Surgery. He accompanied the German armies in the wars of 1864, 1866, and 1870, he was chief surgeon on the staff of the Emperor during the Franco-German war, and he was called to attend the Emperor after the assault of Nobiling. He was the instructor of the leading German surgeons of the present day. His contributions to medical literature date from 1836, when he wrote upon the anatomy of the retina. His best known works are those upon resections for gunshot wounds of the joints; and his name is also familiar in connection with the *Archiv für klinische Chirurgie*, which he edited ever since its establishment in 1860.

Mainly through his example conservative surgery obtained a sure footing in military practice. He was a bold and dexterous operator, and his remarkable results in the excision of joints are well known.

He was for many years President of the Congress of German Surgeons, and was only permitted to retire last year on account of his health and at his own earnest solicitation; he suffered from cataract, but was successfully operated upon last spring by Pagenstecher. His last appearance in public was at the Congress of Naturalists and Physicians at Wiesbaden, when, on September 19th, he opened the proceedings of the Section for Surgery with a few remarks. In his death German surgery loses her most distinguished exponent of his generation.

Dr. Henry Howard, one of the oldest members of the profession in Montreal, has recently passed away. He received his medical education in Dublin, and was a pupil of the celebrated oculist Dr. Jacobs. Dr. Howard came to this country in 1840, and was soon actively engaged in the practice of his profession as an oculist. His leanings, however, were always toward psychological science, and when an insane asylum was established at St. John, P. Q., Dr. Howard was appointed medical superintendent, and on the removal of the institution to Montreal and its great enlargement, he was appointed chief medical officer. Dr. Howard contributed many papers to the various journals on neurological and psychological science, and was a very prominent member of the Montreal Medico-Chirurgical Society, of which he was at one time President. He was a great

favorite with the profession, and was especially popular with the younger men, with whom he loved to discuss all of the more recent advancements in medical sciences. His opinions on crime and insanity were, perhaps, peculiar and somewhat in advance of his time, but he believed in them thoroughly, and was certain that in the near future, as methods of investigation became more accurate, they would receive confirmation. He liked to be called a "Physiological Psychologist." What was once said of Prof. Sharpey, might also be said of Dr. Howard—"He had not a single enemy" (in the profession), "and he numbered among his friends all those who had the advantage of being in his society."

REVIEWS.

RECENT WORKS ON NURSING.

THE NURSING AND CARE OF THE NERVOUS AND THE INSANE. By CHARLES K. MILLS, M.D., Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic, etc. 12mo. pp. 147. Philadelphia: J. B. Lippincott Co., 1887.

MATERNITY, INFANCY, AND CHILDHOOD. By JOHN M. KEATING, M.D., Visiting Obstetrician and Lecturer on Diseases of Women and Children, Philadelphia Hospital, etc. 12mo. pp. 221. Philadelphia: J. B. Lippincott Co., 1887.

OUTLINES FOR THE MANAGEMENT OF DIET. By EDWARD TUNIS BRUEN, M.D., Assistant Professor of Physical Diagnosis, University of Pennsylvania, etc. 12mo. pp. 138. Philadelphia: J. B. Lippincott Co., 1887.

THESE three volumes are the substance of lectures delivered by their authors to nurses, and belong, in reality, to the literature of nursing.

It is an encouraging fact that within a short time nursing has advanced to be a recognized branch of medicine, with several centres where training schools are educating nurses, and by whose instructors books like those in question are produced. These books are eminently fitted for those to whom they are addressed; non-professional attendants may profit by them, and the physician may find convenient knowledge at hand in them with which to refresh his memory for needed details.

Dr. Mills's volume enters a field but little cultivated. There exists no American book commonly known devoted to this subject; and the need of properly educated attendants for the nervous and insane has long been urgently realized. He gives useful points in the recognition of the common disturbances of the nervous system which are so often puzzling, even to a physician. His lucid and discriminating description of massage is greatly needed, in view of the abundance of poorly educated persons practising this mode of treatment. The applications of electricity which it is proper for a nurse to make are clearly described, and the apparatus in common use.

The care of the insane, as practised in the best asylums and the private practice of the author, is treated of in the concluding portion of the book. As supplying a want long felt, and as applying to the treatment of an especially difficult class of patients principles of training which have proved successful in other fields, Dr. Mills's book is valuable and welcome.

Dr. Keating's book is addressed to mothers quite as much as to nurses. It includes maternity and the care of the child until puberty in its scope; and treats fully of the many and varied details which comprise the existence of the young human being. The style of the book is popular, entertaining, and impressive; the treatment advised rational, and the book bears evidence of large experience and careful observation. The author's conservatism is exemplified in his advice to treat all cases of membranous croup as if diphtheria, and certainly nothing but good can come to the mildest case of croup if his instructions be carried out, while, if diphtheria be certainly present, much good will be accomplished before the disease has become established in its full severity.

To those called upon to meet the many and perplexing cares of the custody of children, Dr. Keating's book will be an efficient and happily explicit guide.

In his book upon Diet, Dr. Bruen has fortunately escaped writing a cook-book on the one hand, and a primer of physiology on the other. The author has succeeded, not only in subordinating science to the practical, but in applying science, and in a manner which will enlist the attention of all who read his book. The physiology of digestion and the liquids and solids required by the human organism, are treated of with discrimination, in the light of the recognized facts regarding digestion and assimilation. Infant feeding is carefully considered, and also the amount of food adapted to organisms of various types. The increase and diminution of flesh, and the diet adapted for the diseases most dependent upon a chronic vice of nutrition are described in a clear and interesting manner, the book forming a genuine addition to the numerous literature of nutrition.

SOCIETY PROCEEDINGS.

NEW YORK SURGICAL SOCIETY.

Stated Meeting October 12, 1887.

DR. WILLIAM T. BULL read a paper on

GASTROTOMY FOR THE DIGITAL EXPLORATION OF THE ŒSOPHAGUS AND REMOVAL OF A FOREIGN BODY; RECOVERY.

The introduction of the finger into the pyloric orifice of the stomach for the exploration and dilatation of that orifice when constricted, has been successful in the hands of Loreta, who first attempted it, through a small incision in the stomach.

The cardiac orifice, and the stomach above it, have also been found to be accessible to instruments after a gastric fistula had been established; and dilating instruments have been introduced in that way from below upward in the course of treatment of stricture. But in

only one instance thus far recorded, has the effort been made to explore the œsophagus through the stomach. That was in a successful case, reported by Richardson, of Boston. In a man, who had a plate with false teeth impacted in the lower end of the œsophagus for ten months, he opened the stomach by a small incision, and attempted to reach the body in the œsophagus with the finger. This being unsuccessful, he enlarged the incision (to five inches) so as to admit the hand and forearm. The plate was detached by introducing the finger into the œsophagus, and drawing it first into and then out of, the stomach. A prompt recovery followed the operation.

The feasibility of this procedure was afterward demonstrated by Dr. Richardson[1] in a series of measurements and experiments on the cadaver. In twelve subjects he found that the distance from the centre of an incision, starting from the outer edge of the rectus muscle, and running five inches parallel to the costal cartilages, and one inch below them, to the œsophagal opening in the diaphragm, to be 7.55 inches. When the stomach was drawn as far as possible out of the abdominal wound, the hand and forearm were inserted into its cavity through an incision five inches in length, and the index and middle fingers could be passed two and one-half inches into the œsophagus. He found the distance from the teeth to the œsophagal opening in the average subject to be fifteen inches, and concluded that a body whose position when arrested in the œsophagus was not less than thirteen inches, could be reached from below by the hand introduced as described. Cheever's statement, that through the wound of œsophagotomy the finger could reach as low as the level of the arch of the aorta, was confirmed; and in four cadavera he was able, by passing one index finger through an œsophagotomy-wound downward, and the other upward from the stomach, to bring the two fingers into contact. Fortified by these observations, and the success of the case referred to, he urges with propriety the resort to gastrotomy for bodies impacted at a distance of no less than thirteen inches from the teeth, after other means have failed.

These valuable observations of Richardson's were fresh in my mind, when a boy presented himself, with a peach-stone impacted in his œsophagus, thirteen inches from the teeth. During forty-eight hours I made two efforts to dislodge it with instruments introduced through the mouth. I discarded œsophagotomy; the situation of the body, allowing six or seven inches for the distance from the teeth to the œsophagotomy wound, would leave as many inches of œsophagus through which to manipulate. One could accomplish no more than through the mouth. Deciding on gastrotomy, I considered the best method of performing this with the least injury to the parts, and was led to these reflections:

1. That large incisions in the abdominal wall and stomach, together with the manipulation of that organ outside of the abdominal cavity, and the introduction of the hand into it, ought to be avoided, if possible. They would be very dangerous in so young a subject.

2. That the exploration could be effected by the finger alone, introduced through a small wound, if the anterior wall of the stomach were invaginated, so as to fold itself about and behind the finger entering the œsophagus.

3. That the nearness of the œsophageal opening in the diaphragm to the vertebral column would make that structure an easy guide to the orifice, and, moreover, an incision in the median line would be nearer to that orifice than one parallel to the border of the ribs. This incision was in general preferable, and the hand or finger, manipulating through it, would be less encumbered by the overhanging ribs.

4. That the nature of the body (it being smooth and free from sharp corners) made it probable that it would be safe to push it up from below, or to draw it up, in case it was not easily dislodged downward into the stomach.

Case.—L. C., a colored boy, four years of age, and in good general health, was admitted to the New York Hospital, August 25, 1887. His mother stated that he had swallowed a peach-stone on August 20th, five days before his admission. On drinking immediately afterward the water was regurgitated, and from that moment he had been unable to retain any nourishment. He had lost much flesh, was weak, and complained of thirst and occasional nausea, but vomited only when he attempted to swallow. He had no pain. A physician had passed a probang, but could not reach the stomach. The bowels had moved once in five days, and the urine had been passed as usual.

I saw the boy immediately after his admission, and was struck by his anxious expression and feeble appearance. Though of spare habit, he was decidedly emaciated. He had no fever, and his pulse was a little more rapid than usual, and of small volume. He was given a glass of water, swallowed it, and immediately rejected it. No swelling of the neck could be seen or felt. An œsophageal bougie with an ivory bulb at the end was passed to a distance of thirteen inches from the incisor teeth, where it struck against a hard body. The sound made by a light impact could not be distinctly heard, but the sensation communicated to the finger was unmistakable. The examination was well borne by the patient, and I tried at once to dislodge the body with coin-catchers of different sizes. These only grazed its surface. Attempts to get beyond it with fine gum-elastic and whalebone bougies were equally unsuccessful; and after ten minutes' gentle manipulation the boy was put to bed. I ordered rectal enemata every six hours, containing three ounces of peptonized milk and an ounce of whiskey, and bits of ice by the mouth.

August 26. The rectal injections are well borne, and are continued. The manipulations of yesterday were repeated for fifteen minutes, but without result. An attempt to grasp the body with œsophageal forceps failed. I thought it dangerous to make further efforts, and advised gastrotomy, to which the parents consented.

29th. The operation was done with the assistance of the house-staff, and in the presence of Prof. Wm. H. Carmalt, of New Haven, and several other surgeons. It was just one week after the body had been impacted. After the ether-narcosis was complete, I passed an œsophageal bougie with an ivory-bulb tip and ascertained that the body was still in place, thirteen inches from the teeth. One or two gentle taps were made upon it with the bulb, in the hope that, with the relaxation caused by the ether, it might drop into the stomach.

[1] Boston Med. and Surg. Journal, December 16, 1886.

This, and a further cautious attempt to get beyond it with the evacuator and a slender bougie, were unsuccessful.

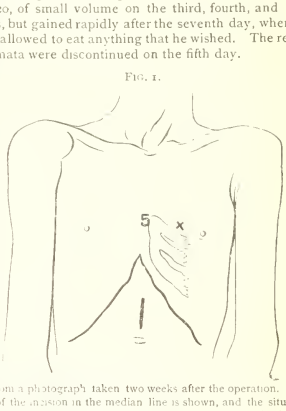
The abdominal cavity was opened by an incision three inches in length, extending from the level of the ninth costal cartilage to a point two inches above the umbilicus. The upper limit was determined by noting the point where the percussion dulness of the liver disappeared. This exposed a part of the anterior wall of the stomach and its greater curvature, about two and one-half inches from the pylorus, while the lower edge of the left lobe of the liver was seen in the upper angle. The index-finger, passed over the under surface of the diaphragm, could feel the motions of the heart, but detected no foreign body at the situation of the œsophageal opening. The stomach was empty. The pylorus was identified, and a part of the anterior wall was selected for incision; this was distant about three inches from the pylorus and midway from the greater and lesser curvatures, as estimated by the fact that the superficial vessels were least conspicuous there. I drew this part out of the abdominal wound and put two loops of silk through it, two inches apart in a vertical line, and made an incision one and a quarter inches long between them. This permitted the escape of a little gas and a few drops of brownish fluid. I fixed two more loops of silk into the edge of this wound, in order to control it thoroughly, and protecting the edges of the abdominal incision with flat sponges, passed my index-finger directly backward till the vertebral column was felt, then upward till it entered the œsophagus.

The finger stopped up the wound so that nothing could escape had there been fluid present, and this encouraged me to depress the abdominal wall and to crowd the finger as far up as possible. In this manipulation the anterior wall, with the loops of silk, followed the finger into the cavity and was folded on itself like the invaginated scrotum in examination of the inguinal canal. The body could not be felt till a bougie was passed and pressed greatly upon it from above. Then one of its flattened surfaces rested against the tip of the finger with a "collar" of mucous membrane below it. I made an effort to tip it with the finger-nail, so that its edge would present downward. I immediately passed along the finger a curved œsophageal forceps till it reached the body, and then drew out, by means of the loops of silk, the anterior wall, the finger following it, and still blocking the opening. One or two efforts to grasp the stone with this and a straight forceps, introduced in the same way, although it could be plainly felt with the tip of the blades, were unsuccessful.

Reintroducing the finger, a slender bougie was passed over it and projected from the mouth, a sponge, one-half inch in diameter and one and a half inches long, was tied to the lower extremity with strong silk, one end of which was left long. The sponge was pulled through, meeting with slight resistance, but the foreign body, while apparently dislodged, was not brought up. A larger sponge was then tied to the long end of the silk and was drawn through. This brought the stone into the mouth, where the finger met and extracted it. In these manipulations the anterior wall was held by the loops of silk two inches above the abdominal wall, while the loops in its edges, manipulated by my assistants, Dr. Lines and Dr. Adams, of the house staff, were useful in securing easy access to the interior of the stomach. A few drops of turbid brownish fluid escaped from time to time, but were absorbed by two sponges held on either side of the stomach wound. No blood was seen in the mucus surrounding the stone or the sponge, and I concluded that no injury had been done to the œsophageal mucous membrane. The gastric mucous membrane was sutured with eight catgut sutures, the peritoneal coat with ten or twelve Lembert sutures of fine carbolized silk. The punctures above and below the incision, occupied by the loops of silk, were each closed with a single Lembert suture, for I was in doubt whether they extended through all the coats or not. The abdominal incision was closed with a continuous peritoneal suture of catgut, and interrupted silk sutures through the other layers. The duration of the operation was one hour and a quarter, and at its close the general condition of the patient was satisfactory.

The dressing was of bichloride gauze, covered with absorbent cotton and a roller bandage. The boy made a rapid recovery without accident. The temperature was never above 99°, and there was no pain, nausea, or vomiting. He was quite weak, with a pulse of 110 to 120, of small volume on the third, fourth, and fifth days, but gained rapidly after the seventh day, when he was allowed to eat anything that he wished. The rectal enemata were discontinued on the fifth day.

FIG. 1.



From a photograph taken two weeks after the operation. The site of the incision in the median line is shown, and the situation of the impacted stone, indicated by X, at the level of fifth rib.

For the first twenty-four hours he received nothing by the mouth, during the second day brandy and water, and beef-tea at frequent intervals, on the third day ice cream and milk and tea, then soft boiled eggs and toast. His appetite was quite poor and he had no desire for food till watermelon was offered to him in addition to his other diet, on the fifth day. The wound healed entirely by primary union without any pus and there was no decided tenderness in its vicinity. He sat up on the tenth day, and walked alone freely as well as ever, a week later.

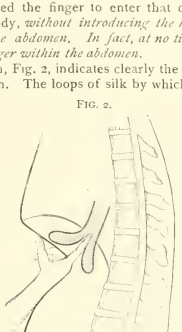
I submit the patient for your inspection, and have traced one or two lines on his dark skin to show the relative situation of the foreign body (opposite the level

of the upper border of the fifth rib), and of the incision in the *linea alba* (Fig. 1).

At the time of operation the abdominal wall, in consequence of his week's starvation, was thinner and softer than now, and could be more easily depressed, so as to lessen the distance in a straight line from the abdominal incision to the œsophageal opening at the cardiac orifice. This condition, and the moderate proportions of the boy, permitted the finger to enter that orifice and to reach the body, *without introducing the hand into the cavity of the abdomen. In fact, at no time was more than one finger within the abdomen.*

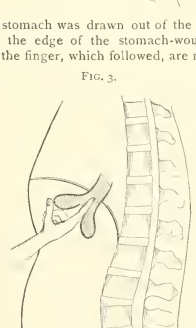
A diagram, Fig. 2, indicates clearly the nature of the manipulation. The loops of silk by which the anterior

Fig. 2.



wall of the stomach was drawn out of the cavity, and which held the edge of the stomach-wound, closely plugged by the finger, which followed, are not shown.

Fig. 3.



In the adult it would doubtless be necessary to introduce the hand into the abdominal cavity, in order to carry before the finger, or invaginate the anterior wall of the stomach. This proceeding is made clear by Fig. 3. I likewise present the peach-stone, and the sponge attached to the string which was drawn through the œsophagus. The stone is of average size, has a circumference of two and five-eighths inches, measures one inch in its long, and five-eighth of an inch in its short diameter, and is sharp only at one end.

In connection with this case, the following features seem to be worthy of attention:

1. The small wound in the stomach—one and a quarter inches—just sufficient to admit the index finger.

2. The invagination of the anterior wall of the stomach.

3. The use of the loops of thread, entrusted to assistants, by traction on which the edges of the wound in the stomach were kept close against the finger, so that it acted as a plug, and prevented the escape of any fluid.

4. The moderate manipulation of the stomach itself. At no time was it drawn more than two inches beyond the abdominal wall. This was at the time instruments were introduced; as soon as they reached the cavity, the wall, with finger and instruments, was at once thrust upward, and the œsophageal opening was reached by following the vertebræ and the middle line as a guide. The instrument being passed almost directly from the wound to the œsophagus did not wander about over the surface of the gastric mucous membrane.

Each of these features is in itself, a small "point," but they form, when combined, an important part of that sure and delicate technique which is essential to success in operations on the abdominal viscera. Furthermore, I think that the plan of not making any prolonged effort to draw the stone into the stomach was of great advantage. Aside from the fact that much time would have been spent, one would have directed one's efforts against the stone lodged in the part of the canal where it had rested for seven days, and where the mucous membrane might have been inflamed, softened, and ulcerated, and, therefore, easily perforated. In drawing it from below upward, one had the advantage of the larger calibre, and a sound mucous membrane, which neither the smooth body nor the soft sponge was likely to injure.

I have always regarded Dr. Richardson's contribution as an invaluable addition to our store of knowledge, and I hope that this Society may be of the opinion that in following his example I have helped to demonstrate that in gastrotomy we have an additional resource in the management of foreign bodies in the œsophagus. The comparative safety of the operation may be judged from tables of cases of gastrotomy for foreign bodies in the stomach recently reported by Bernays[1] and Richardson.[2] In twelve instances bodies have been removed from the stomach, which was uninjured and not adherent, and in two cases (including my own) from the œsophagus. All but two cases were successful.

These figures are more favorable than the statistics of œsophagotomy reported to the Society, last year, by Dr. Markoe;[3] these show 82 cases, of which 63 recovered and 19 died. The marked difference in the death-rate suggests to my mind the advisability, in cases where one is in doubt as to his ability to extract the body safely by œsophagotomy, of resorting promptly

[1] The Medical News, January, 1887.

[2] Boston Medical and Surgical Journal, December 16, 1886, page 573.

[3] The Medical News, May 1, 1886.

to operating the stomach. Such a doubt may arise from the difficulty in estimating the exact situation, from ignorance of the nature of the body, or from the circumstance that no instrument can be passed beyond it. It is certainly dangerous to use forceps which open in the œsophagus, when bodies completely occlude its lumen, and those which are flat and lie crosswise can only be caught by specially contrived instruments, or withdrawn by getting such an angular instrument as the coin-catcher beyond them. Pressure from below with a large bougie, or traction toward the mouth, would disengage any sort of body.

As a general rule, one can deal with all bodies impacted within the reach of the finger, manipulating in the œsophagotomy wound, that is six inches from the cricoid cartilage, according to Dr. Richardson, by the operation in the neck. Beyond this point gastrotomy would be necessary, and would probably be safe and efficient.

Dr. Stimson asked Dr. Bull if he had been able to determine why the body lodged just where it did.

Dr. Bull replied that the position of the body was determined by the presence of a concentric projection, or collar, of mucous membrane, which was situated about an inch and a half above the pyloric orifice; the body lodged just above this constriction.

Dr. Weir asked if the narrowest part of the œsophagus was not usually situated higher.

Dr. Bull said that it was, but that if a foreign body succeeded in passing the point opposite to the arch of the aorta it was usually arrested at the position described in this case.

Dr. Weir believed that the calibre of the œsophagus was larger than was generally represented, especially by French writers. He had passed bougies having a diameter of 21, 22, and, in one instance, 23 millimetres.

Dr. Stimson thought that, while the method employed by the reader had been in the highest degree judicious and successful, it seemed possible that it might sometimes be found difficult to push the foreign body upward as to push it downward—that is, under certain circumstances in which the impaction was due to the shape, rather than to the bulk of the body, to its length and peculiarity, rather than to its breadth. In the present case the stone could not be forced downward through the lower part of the œsophagus, although the finger, which was as thick as the stone, could be passed upward past. It was conceivable that, in pushing a large body upward, its upper end might diverge from the axis of the canal and catch in the mucous membrane in such a way that any effort to dislodge it from below, by pressure on its lower end, would only make its fixation more firm. In withdrawal by an instrument, which grasped the anterior end of the body, this difficulty was less likely to be encountered, although, of course, the use of the forceps had dangers of its own. Experience might show that the difficulty which I retrench the generalization of the method so successfully employed by Dr. Bull.

Dr. Sands thought that the dangers incurred by applying instruments from above were greater than the risk of stage gained.

Dr. Wyeth thought the mechanism of the sponge in the case reported was nearly perfect; by thoroughly distending the œsophagus it served to obliterate any projecting folds of mucous membrane. The pressure upward would naturally dislodge the large, smooth end of the peach-stone first, and thus facilitate the extraction.

Dr. Makkoe said that every surgeon who had had experience in searching for foreign bodies in the œsophagus had found that little could be accomplished. He had noted this especially after œsophagotomy. He could readily conceive how Dr. Bull failed to grasp the body with forceps. He might have feared to open them sufficiently wide through a dread of tearing the mucous membrane.

Dr. Bull thought that most foreign bodies of irregular shape, such as plates with teeth, could be removed from above by means of an instrument, such as a coin-catcher. There was some danger in these manipulations, but it might be offset to some extent by care and delicacy of touch on the part of the surgeon. A sharp body could not be safely pushed upward from below, while the removal of a smooth body from above by means of forceps was always more or less risky. He had about a year previously perforated the œsophagus while endeavoring to extract a horse-chestnut with forceps. If we accepted the belief that a small wound in the abdominal wall, and also in the stomach, could be made with a minimum of risk, why should we not perform gastrotomy at once? There was absolutely no reaction after the operation in the case reported.

Dr. Weir referred to a case reported in a foreign journal, in which a patient had swallowed fragments of wood and glass with suicidal intent. Gastrotomy was performed and the foreign bodies were removed. The patient subsequently repeated the act, and gastrotomy was performed a second time with success.

Dr. Bull asked Dr. Markoe regarding the feasibility of introducing the finger through an œsophagotomy wound as far down as the arch of the aorta. The latter replied that he had never been able to reach so far.

Dr. Wyeth said that he knew a country practitioner who being obliged to rely on his own resources, dislodged a pin from the œsophagus by feeding the patient with balls of corn-meal mush, containing pellets of fine cotton. The mush was digested, and the cotton remained in the stomach. The patient was then given an emetic, and vomited the cotton, in which was imbedded the pin.

Dr. Sands stated that a physician had once brought to him his child, who had swallowed a nail. At the father's suggestion the boy was placed on a diet of sweet potato, and soon after he had a copious evacuation, containing a mass of potato, in which was found the nail.

NEPHRECTOMY.

Dr. John Wyeth presented a tumor of the left kidney, which he had removed by the lumbar incision. The patient was a woman, who had suffered from urinary trouble for five years. She had at intervals of a few weeks or months an obscure pain in the left lumbar region, followed by hæmaturia. During the past three years she had been confined to her bed, and last May she was placed under his care through the courtesy of Dr. McWilliams, of this State. Upon examination a tumor of the left kidney was detected, which Dr. Wyeth thought was due to cystic degeneration of the

organ, resulting from calculous pyelitis. The patient was reported to have passed calculi, but none had ever been seen by her medical attendants.

Dr. Janeway saw her in consultation, and thought that the tumor was a neoplasm, although he declined to give a positive opinion as to its character. Nephrectomy was performed in May. The usual lumbar incision was made, and, as there was a space of only three inches between the last rib and the crest of the ilium, a transverse incision was made, the latter extending *to*, but not *through*, the peritoneum, which was folded back toward the median line. There was no hemorrhage of any consequence. The mass was easily separated and the pedicle was secured with an elastic ligature, which was applied entirely by the sense of touch. The vessels were then divided and ligated. The operation lasted two hours, and the patient died of shock fifteen hours later. There was no autopsy. The tumor measured about ten inches in circumference at its least prominent part, and was eight inches in length. A microscopical examination showed that the growth was a medullary carcinoma, which grew from the upper third of the organ.

Dr. Sands asked regarding the condition of the other kidney.

Dr. Wyeth said that it was inferred that it was healthy, as the patient passed a fair amount of urine (such as could not have come from the organ destroyed by disease), which contained only a trace of albumen and no casts. The sound kidney could be felt during the operation.

Dr. Bull suggested that it might have sprung from the suprarenal capsule.

Dr. Wyeth thought that a careful examination of the specimen would show the intimate relations of the tumor to the kidney itself.

Dr. Briddon called attention to the fact that the occurrence of hæmaturia would seem to prove that the kidney itself was affected.

Dr. Weir asked if laparotomy would not have been a safer and more rapid procedure.

Dr. Sands agreed with Dr. Weir's criticism. He thought that the anterior section would certainly give more room than the lumbar incision. In the case of a suppurating kidney, however, the objection might be raised that, if the former method were adopted, the pus might escape into the peritoneal cavity.

Dr. Briddon cited a case in which he had tried to remove a tumor, larger than the one exhibited, through a lumbar incision, and was obliged to abandon the attempt and to perform laparotomy; it was easily removed by the latter method. He suggested that it might not be a bad idea to make a lumbar, in addition to the abdominal, incision, since the former could be utilized for drainage.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 12, 1887.

The President, J. Solis-Cohen, M.D., in the Chair.

Dr. Carl Seiler read a paper on

CHRONIC RHINITIS AS AN ETIOLOGICAL FACTOR IN ACNE OF THE FACE.

For a number of years he had made the observation that acne vulgaris and acne rosacea coexisted frequently with chronic rhinitis, and particularly with the atrophic form of nasal catarrh, but it is only lately that he has come to the conclusion that this form of nasal disease is in many cases of acne the exciting cause. This conclusion may seem far-fetched and perhaps unreasonable at first glance, but he hopes to be able to show that there is undoubtedly a close connection between the two affections. For this purpose he gave a short history of a few of the cases which have come under his observation, before entering upon a theoretical discussion of the connection between chronic rhinitis and acne.

Case.—J. H., aged thirty-eight years, suffered from stoppage of the nose for several years, and every morning he blew out large scabs. After this his nose felt clear but dry, and he had lost the sense of smell to a very large degree. For two or three years he had noticed a redness of the external integument of the nose, which had become gradually worse, so that now it had spread from the nose to the cheeks, and pimples had made their appearance. The rest of his face was free from pimples or redness. He was a total abstainer from alcohol. His general health was good.

The anterior nasal chambers were filled with dry scabs of hardened mucus, and beneath the mucous membrane was unusually pale. The lower turbinated bone was barely projecting from the wall of the nose, and the turbinated cavernous tissue apparently absent. This condition caused the anterior chambers to be abnormally large. Irritation with the probe caused but a very slight amount of moisture to gather around the spot touched, while the whole of the mucous membrane was abnormally dry. There was no odor.

The treatment consisted in cleansing the nasal cavities morning and night with an alkaline wash, and in stimulating the mucous membrane with dilute nitrate of silver in powder, a small quantity of which was blown into the nostrils two or three times a week. In order to keep up the stimulation a tampon of cotton was introduced into the anterior nasal chambers and placed against the side of the nose, in place of the atrophied inferior turbinated bone, which tampon was renewed by the patient after the cleansing morning and night. As an application to the skin a lotion was prescribed consisting of alcohol and precipitated sulphur, to be applied every night with a tuft of cotton, and to be washed off in the morning with soap and water.

Under this treatment the acne gradually diminished, and the mucous membrane of the nose became again bathed with secretion, until after a little over three months the redness had entirely disappeared, and the cotton tampons could be dispensed with, because the lower turbinated bones, or at least the cavernous tissue, began again to project into the lumen of the anterior nasal chambers. The patient was seen three years later, unfortunately without having an opportunity of examining his nose, but he said that there had been no return of the acne, and that his nose troubled him but little, and then only when he neglected to use the alkaline wash; the sense of smell had also returned to a large degree, but was not as acute as he might wish.

The short notes of this and two other cases suffice to show that there is a connection between atrophic rhinitis and acne of the face. Although a large number of such cases could be cited to demonstrate still further this

point, it would be waste of time to do so, as they are all, more or less, repetitions of each other.

According to the statements of different authors on skin diseases, acne occurs with equal frequency in both sexes, and usually makes its appearance at the time of puberty, and is frequent until the age of thirty. As predisposing causes are mentioned, gastric disturbances, either lack of or excess of sexual connection, onanism, insomnia, and intemperance, but no mention is made of atrophic rhinitis as a predisposing or existing cause. That the genital organs have a great influence upon the production of the disease cannot be doubted, for many cases are cited in which acne showed itself only during pregnancy, or at the menstrual period, in women; and it disappears with the cessation of the practice of self-abuse in boys and men; also, the fact that it is most frequent at puberty, would point in that direction. Some authors lay so much stress upon this that they direct their treatment altogether to the sexual organs, by passing a bougie into the male urethra, and prescribing vaginal douches and medication, having no faith in local applications to the skin of the face.

Two factors must act in conjunction with each other to produce acne, one as an obstruction to the efferent channel of the sebaceous glands by the introduction of dirt into it, and the drying of the secretion behind it, producing the so-called comedones, and also a diminution in the activity of the gland itself, which causes an alteration in the consistence and quantity of the secretion, which thus is not able to remove the foreign body in the mouth of the duct by pressure from behind, as undoubtedly occurs in the healthy skin. Thus the retention and accumulation of the secretion causes by pressure a localized inflammation, which is finally relieved by the formation and evacuation of pus. In acne rosacea, the rarer form of the disease, we find no formation of pustules, but simply a general, more or less, diffused inflammation, which is probably due also to a perverted action of the sebaceous glands, but does not lead to a retention of the secretion.

Dr. Seiler had not been able to find an opinion as to the direct cause of the glandular irritation, whether it is altogether local, and caused by obstruction of the duct in the formation of comedones, or whether it is due to reflex nervous irritation, or finally is produced by a more or less general disturbance of the capillary circulation in the skin of the face.

The first of these propositions may be at once set down as insufficient to explain the pathological condition, for comedones are frequent in almost every face, without being necessarily accompanied by acne. The other two propositions may be considered together, for we cannot have inflammation without disturbance of the circulation, and no disturbance of the circulation without nerve influence.

The above cited predisposing causes clearly indicate that an irritation of the nervous system must exist somewhere, be it in the mucous membrane of the stomach, or in the sexual apparatus; which, by reflex, acts upon the easily influenced capillary circulation of the skin of the face and neck, and thus, by causing a change in the capillaries around the sebaceous glands causes a perverted action of these glands if it is kept up for any length of time, or if no relief from blood-pressure is afforded. It is his belief that the cavernous tissue covering the turbinated bones provides such a relief, and that this is one of the functions of the erectile tissues of the body. This belief is strengthened by the fact that under mental excitement, which causes blushing of the face, the cavernous tissue in the nose swells up, while, on the contrary, under any emotion which causes paling of the face, the erectile tissue of the turbinated bones becomes paler, and diminishes markedly in bulk, facts well known to every laryngologist. Let this cavernous tissue be absent, or greatly diminished, as in the case in atrophic rhinitis, and very little or no relief is afforded for the excessive blood-pressure in the capillary circulation in the skin of the face, and the result will be acne if any of the predisposing causes be present. In the cases above cited, and in many others under his observation, the acne disappeared *part passu* with the reformation of the cavernous tissue, and thus these would seem to be of some importance as clinical proofs of this theory.

Dr. Seiler was fully aware that a single line of cases observed by one observer, are by no means a sufficient guarantee for the acceptance of a theory, and it will require many more cases observed by many observers, to prove or disprove it. At the same time he cannot but think that atrophic rhinitis may be one of the etiological factors of acne.

CORRESPONDENCE.

GLEDITSCHINE—STENOCARPINE.

To the Editor of THE MEDICAL NEWS.

SIR: The fact, seemingly well proven by the experience of Drs. Seward, Claiborne, Knapp, Jackson, Mitchell, and others, that the newly discovered alkaloid, gleditschine, is largely like cocaine in its power as a local anæsthetic, has prompted me to determine whether it has a value akin to the coca alkaloid, as a stimulant in the treatment of opium habitués, and I am now experimenting in this direction, using a two per cent. solution exclusively by subcutaneous injection.

That cocaine, hypodermatically, is a valuable aid in treating the opiate neurosis, is beyond question, in my opinion, though it is not a specific, and should never be given for this purpose by the patient himself, be he physician or layman.

Should gleditschine have a similar value, it may be found free from the ensnaring danger of cocaine, though assuming the fact of its stimulant power, this freedom from risk will not be likely, and we shall note, probably not far in the future, baneful effects from its abuse, and gleditschine inebriety be added to the list of toxic neuroses.

It has been stated by Dr. Seward, that "he has observed antidotal effects to gleditschine from morphia," and W. H. Mitchell asserts "it is a direct antagonist of morphine and opium, ten drops of the two per cent. solution neutralizing one grain of morphine or six of opium." Experiments on rabbits, now being made by myself, will, it is to be hoped, sustain these claims.

J. B. MATTISON.

BROOKLYN, October 1st, 1887.

NEWS ITEMS.

An International Congress of Ophthalmology in 1888.—The Ophthalmological Society, at its recent meeting at Heidelberg, determined to hold an international congress of ophthalmologists next year, with Professor Becker at the head. The attendance at the Society's recent meeting was over 100.

Pasteur's Work in Italy.—Since July 1st 1010 cattle and sheep have been inoculated against anthrax in Italy. The Director of the Veterinary College at Naples has applied for material to inoculate, in addition, 1000 sheep. The results are good.

The Gynecological and Obstetrical Society of Baltimore at a meeting held October 11th, elected the following officers for the ensuing year:

President.—Dr. H. P. C. Wilson.

Vice-Presidents.—Dr. F. E. Chatard, Jr., Dr. John Morris.

Secretary.—Dr. Charles O'Donovan, Jr.

Treasurer.—Dr. Robert T. Wilson.

The Tent Service in the Boston City Hospital.—The last annual Report of the Boston City Hospital states that the tent service in connection with the hospital, which affords fifty-six beds, was in active use, and of the utmost advantage, especially for the most serious surgical cases, during the summer months. Its maintenance is comparatively inexpensive, and experience has amply demonstrated the advantages of treatment under these conditions; moreover, opportunity is thus afforded of vacating and renovating in turn the permanent wards.

Since the publication of this report, we understand the tent service has been further extended, so that medical patients share in some degree in its benefits.—*Boston Medical and Surgical Journal,* October 13, 1887.

A Hospital Damaged by the Elevated Railway.—Dr. C. F. Taylor, has, after three trials, won a verdict of $12,000 against an elevated railway for damages to his private hospital in New York.

Counterfeiting the Labels of Merck & Co., of Darmstadt.—The *New York Medical Journal* of October 15, 1887, states that action has been begun against a firm of New York druggists, for counterfeiting the labels of this well-known German firm.

Emmet's "Gynecology" has been favorably reviewed and well received by the French, who commend especially the carefulness and conscientiousness of his work.

The Discussion Regarding Cholera in the Vienna Congress of Hygiene.—As was anticipated, the International Congress of Hygiene at Vienna last week, offered an opportunity for a duel of words between the leaders of sanitation who differ so widely concerning the best means of keeping cholera out of a given territory. The members of the Congress included many members of the last International Quarantine Commission which met at Rome, and at which there were distinctly formed a quarantine and an anti-quarantine party. Prof. Gruber, of Vienna, described his experience with cholera in Austro-Hungary in 1885 and 1886, and said that the intercourse between human beings provided the greatest opportunity for the spread of cholera, but its spread depended largely upon the season and weather. Prof. Gruber expressed himself as being a firm believer in Koch's bacillus theory and a strong adherent of the quarantine system. Two Japanese delegates then stated that cholera was always introduced into Japan by English or French ships coming from China. When Max Von Pettenkofer, of Munich, of the anti-quarantine school, and Dr. Proust, of Paris, his able opponent, joined in the debate, the climax of the discussion was reached. Pettenkofer upheld the English idea of sanitary preparation to prevent the disease from getting a foothold, and claimed, that while he did not deny the discovery of the bacillus by Koch, that its existence alone could not explain all the phases of the disease as seen in India and elsewhere. Dr. Proust advocated isolation, detention, and disinfection, and the Congress adopted by a large majority, five resolutions moved by him setting forth the views of the quarantine party.—*Sanitary News,* October 8, 1887.

Dr. John H. Rauch on Quarantine Defences.—The efficient President of the Illinois State Board of Health is quoted as follows on this subject by the *Sanitary News* of October 8, 1887:

"Sooner or later the national government will be compelled not only to assume supervision of exterior quarantines, but to provide for a permanent system of coöperation with State and local governments in the administration of international sanitation; in order, on the one hand, to prevent the introduction of exotic epidemic diseases, and, on the other, to prevent their spread from State to State along the great intranational highways of travel and commerce. This is a national duty. It is one that the national government only can adequately discharge, and its expense is, equitably, one which should be defrayed from the national treasury." Also, "Congress should give the President the power to issue a proclamation, upon the recommendation of the national health authority, forbidding immigration into the United States from infected districts of other countries, and it should provide some method of international sanitary coöperation between this country and the dominion of Canada, whose interests are substantially the same as ours in these matters, and whose contiguity makes coöperation of vital importance."

The Need of Caution in Contagious Diseases.—The following instance of direct contagion from the corpse of a diphtheritic patient should prove an instructive reminder of the dangers attending such diseases:

Information just received at the Michigan State Board of Health office, illustrates the immense importance of extreme care in dealing with contagious diseases. A young man whose parents live in Brighton, died in Detroit a few weeks ago, after a week's sickness. The attending physician called the disease at various times, "putrid sore throat," "gangrenous sore throat," and "ulcerative tonsillitis." He died of failure of the heart, a common mode of death in diphtheria. The remains

were sent to Brighton, and on the casket was a certificate that he died of heart-disease. As the boy was well known in Brighton, it was proposed that the high school go in a body to the funeral, but the principal of the school, and the health officer of the village, suspecting that all was not right, vigorously objected to any children attending the funeral. About August 1st, the lady with whom the boy lived in Detroit, visited the boy's parents in Brighton, bringing his clothing that had been left with her. In ten days after her arrival, two children in the family were taken with a malignant form of diphtheria, one dying August 23d, and the other, when last heard from, being in great danger.

From the statement of the case there can be little question that the boy died in Detroit of diphtheria. The father says that if his children in Brighton have diphtheria, then his boy in Detroit had diphtheria, because, he says, "it is the same thing." The members of the family in Detroit have since had sore throats.—*Medical Age*, September 10, 1887.

GENERAL GREELEY'S EXPERIENCE IN THE USE OF ALCOHOL DURING ARCTIC EXPLORATION.—In the *Forum* for August, General Greeley relates his experiences as follows:

"The subject of alcohol was frequently and generally discussed during the winter at Cape Sabine, and all, without exception, concurred in the opinion that spirits should be taken after a day's labor was over, and not before or during exhausting work, nor while suffering from exposure that was to be continued. . . . Later, when the party had been slowly starving for many months, and when the supply of food was so diminished as to necessitate a greater reduction of rations, the pure alcohol on hand was issued as food, being diluted by about three times its weight of water. Each man received daily, perhaps a quarter of an ounce of alcohol, the effect of which was most beneficial. The general impression, with which I most heartily agreed, was that the alcohol supplemented food, and had a decided alimentary value. There could be no question of its beneficial effects as a mental stimulus to every member of the party, under our unfortunate condition at Sabine."

PHYSICAL DETERIORATION FROM OVERCROWDING AT SCHOOL.—At the recent Congress of Naturalists and Physicians at Wiesbaden, PREYER reported, as the result of his investigations, that over sixty per cent. of scholars entering practical life from school were physically unprepared for work and poorly developed. Of the first year scholars only one-third were in good condition; one-fourth were short-sighted. One-fourth of all the scholars were injured in process of education, in physical health or development. Short-sightedness increased in frequency and degree from the lower to the highest grades.

THE HYGIENE OF TO-DAY.—ROCHARD's speech at the recent Vienna Congress of Hygiene, characterized the hygiene of the present as taking the laboratory for its domain. It must demonstrate to the public that the efforts of workers in scientific hygiene are not limited to commissions, volumes of transactions, and conferences, but that, acting upon positive knowledge, the scientific hygienist will "combat the indifference of governments, popular ignorance, and administrative failure."

THE LAST DISTURBANCE CAUSED BY PRANZINI.—The Paris Faculty of Medicine has been exercised by a rumor that two officials had received gifts of card-cases, made from Pranzini's integument. The offenders were at once sought, and the desecration of the corpse of the murderer was indignantly repudiated by the medical men who had to do with it. On investigation, it was found that a servant in the amphitheatre of the Faculty had been formerly servant to an officer. Wishing to make a gift to his former master, he had taken a piece of Pranzini's integument to a manufacturer, stating that it was sheepskin, and had manufactured two very handsome card-cases. On exonerating the medical men engaged in the examination of the body, an apology was rendered, and the matter was dropped.

SILVER ABSORPTION IN PLATE WORKERS.—It is not generally known that the skin of workmen who have to manipulate silver is liable to become impregnated with metal. Observations made on 800 silver workers in Berlin have shown that all of them had the characteristic patches of coloration. These patches are round or oval in shape, varying in size from a millet-seed to a broad bean. As a rule they are not raised; they are anæsthetic, and occur principally on the dorsum of the left hand. Only workers in silver are thus affected, and not those who manipulate gold or copper. The absorption of the metal seems to have no effect on the general health. Microscopical examination shows that the patches are caused by the deposit of metallic silver in the tissues, and they are soluble in nitric acid and cyanide of potassium. It was noticed that the men effected were invariably those who had some ulceration or abrasion of the hands through which the metal was absorbed. The nature and shape of the metallic deposit warrants the supposition that the metal enters in a soluble form, and is then precipitated. Curiously enough, three workmen, who were being treated for syphilis with mercury, developed a number of fresh stains in a comparatively short space of time.—*British Medical Journal*, August 6, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY, FROM OCTOBER 11 TO OCTOBER 17, 1887.

ALEXANDER, CHARLES T., *Lieutenant-Colonel and Surgeon.*—Relieved from duty as attending surgeon and examiner of recruits at St. Louis, Missouri, and ordered for duty at Fort Meade, Dakota.—*S. O. 236, A. G. O.*, October 8, 1887.

CUNNINGHAM, E. V., *Captain and Assistant Surgeon.*—Died, October 12, 1887, at Fort Lewis, Colorado.

APPOINTMENT.

JARVIS, NATHAN S.—To be Assistant Surgeon, United States Army, with the rank of First Lieutenant, October 14, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

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ORIGINAL ARTICLES.

SOME GENERAL REMARKS ON TUMORS OF THE BLADDER, BASED ON THE REPORT OF A CASE OF PAPILLOMA OF THE BLADDER IN A FEMALE,[1]

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PROFESSOR OF OBSTETRICS AT THE WOMAN'S MEDICAL COLLEGE OF CINCINNATI; GYNECOLOGIST TO ST. MARY'S HOSPITAL.

TUMORS of the bladder have but recently received that attention which their importance demands, not that the occurrence of neoplasms in this viscus had not been previously recognized, but the imperfect methods of examination, together with insufficient modes of treatment, failed to give an opportunity for a satisfactory exposition of this subject in all directions. Owing to the recondite nature of tumors of the bladder, the diagnosis was often not clear; in many cases cystitis, which here was only a symptom, and not the disease, was undoubtedly dependent upon the presence of a tumor, and even calculi were mistaken for neoplasms. Whilst, therefore, tumors in other parts of the body have long since attracted the closest attention for the purpose of diagnosis, as well as of treatment, those of the bladder have, until little more than a decade ago, received but a passing notice. The confusion that surrounded both diagnosis and treatment also prevented a close examination of their pathological character, hence the reason why so little is found in the older works on special anatomy on tumors of the bladder, and why, even at the present time, considerable difference of opinion exists regarding their exact pathological classification, respectively their benign or malignant character.

A new impetus, however, was given to a study of this subject by the labors of two men who proposed new methods of exploring the bladder by that best of instruments, the index finger, by which new light was thrown upon a hitherto obscure subject. Gustave Simon, of Heidelberg, developed a safe and ready method of exploring the female bladder through the dilated urethral canal. Sir Henry Thompson, of London, devised a new operation, called by him external urethrotomy, by which the same object, digital exploration, was attained in the male organ. It is true both these operations had been occasionally resorted to by others before their time, for the purpose of extracting foreign bodies from these regions, but to Simon and Thompson belong the credit of first having systematically developed and practised their methods for diagnostic purposes. But not alone as a means of diagnosis have these operations proved of inestimable value, but also as a method of treatment. Hence, if they should not reveal the presence of a tumor or other foreign body, the simple dilatation of the urethra in the one, and "button-holing" the same in the other, have acted as a remedial measure in otherwise intractable cases of vesical catarrh and other affections of the bladder. It may, therefore, be said that both operations have now been universally accepted as valuable contributions to the diagnosis and treatment of a variety of disease of the bladder. The shortness and dilatability of the female uretha render Simon's operation the simpler of the two, as it is bloodless and comparatively painless, at least after repeated attempts. The length and narrowness of the male urethral canal necessarily demanded an artificial opening somewhere near the end of the long urethra, through which the finger could be introduced. For this end, as already mentioned, Sir Henry Thompson devised his external urethrotomy. Simon published his first article on a new method of making the female bladder accessible, in 1875, and Sir Henry Thompson performed his first urethrotomy followed by the removal of a vesical tumor, November 6, 1880. Since this time, diseases of the bladder have received a greater degree of study, and several valuable treatises have been written on these subjects, the most important of which are Sir Henry Thompson's lectures on the *Diseases and the Surgery of the Urinary Organs*, including his monograph on *Tumors of the Bladder*, and Winckel's work on *Diseases of the Female Urethra and Bladder*, as a part of Billroth's *Handbuch der Frauenkrankheiten*. It is to these two works that I am chiefly indebted for the statistics regarding the frequency of vesical disease, notably to the latter.

The early statistics are both meagre and faulty, due to the fact that probably many cases had not been recognized, at least their true nature not understood, owing to the absence of positive symptoms, or they had been confounded with each other as calculus with tumor, tumors with chronic cystitis, hypertrophy of the mucous membrane, etc.

A study of the statistics has been pursued in three directions: 1, the proportion of the diseases of the bladder to diseases in general, including the mortality; 2, the percentage of vesical diseases in males and females respectively, and, 3, the percentage of the various forms of vesical diseases to each other. As regards the first point, Winckel has endeavored to form some estimate from the records of three of the largest hospitals in Berlin. In nearly 42,000 cases of both sexes (25,733 men, and 16,077 women), he found 235 cases of vesical disease (187 men, and 48 women), making a percentage of 0.5, or one-half of one per cent. for all, or 0.7 per cent. for men, and 0.3 per cent. for women. Winckel, however, concludes that little

[1] Read before the Cincinnati Academy of Medicine Oct. 10, 1887.

information can be derived from a study of these statistics, except that vesical diseases are much more frequent in women than in men. The mortality list in Vienna in 1874 shows that out of 17,316 deaths only 33 men and 6 women were registered as having died from some disease of these organs, or 0.2 per cent. of the whole. This, of course, would not form a true estimate of the comparative frequency of vesical trouble, as many cases might have died from other diseases complicating disease of the bladder. Here again, however, we find a preponderance of the male over the female sex. From a report of the medical district of Musser, from 1807 to 1872, it appears that of 58,466 sick people 353 had kidney disease, 309 bladder affections, and 577 gonorrhœa, making vesical diseases more frequent than those of the kidneys, or 0.68 per cent. of the whole.

As regards the proportion of vesical disease to other affections in the same sex, and for our purpose we will simply take the female, we find again, quoting Winckel in his reports of 3775 sick females, there were 246 cases, or 6.5 per cent. of diseases of urethra and bladder, but 118 of these, or 15 per cent., occurred in the last 776 cases, showing that the percentage increased as the affections were more earnestly sought after.

The same author also selected as a basis for his statistics 2505 female cases out of a total number of 6861 autopsies collected at his request by Birch-Hirschfeld, from the records of the Dresden City Hospital in twenty-five years, from 1851 to 1876. Of these, 184, or 7 per cent., showed post-mortem evidences of urethral or vesical disease. Of these again, 45, or 21.7 per cent, had some form of tumor, 37 being cancer, besides 36 cases of vesico-vaginal fistula caused by perforating cancer. Winckel's own list of 575 female autopsies shows 144 cases of vesical disease, or 25 per cent., and 16 of these had some form of new growth, excluding tuberculosis of the bladder, of which there were 5 cases.

Although women suffer from tumors more frequently than men, it does not seem to follow that new growths in the bladder are more frequent in the former. For Gult found in 101,411 sick cases in the three largest Vienna hospitals, 16,637 suffering from tumors; 11,140 of these were women, and 16 had tumors of the urethra, 1 fibroma, 3 papillomata, 3 polypoid growths, 1 sarcoma, and 8 carcinomata. 20 had cancer of the bladder, as against 46 men that suffered from it. In 119 cases of primary tumor in both sexes, Sperling found 41 fungoid growths (fibromata or papillomata, 19 medullary carcinomata, and 5 scirrhus (25 cancers altogether), 10 mucoid polypi, 6 myomata, 7 carcinomata, and 6 fibrosarcomata. Of the fibromata, two thirds occurred in males and one third in females, and carcinomata were four times more frequent in men than in women. Rauschenbusch found 10 females affected in 22 cases of papillomata of the bladder. In his list of 20 operations for tumors of the bladder, Sir Henry Thompson records 2 women, the remaining 18 being men. The great majority of these were papillomata. Of about 50 specimens belonging to the London museums, examined by him, 43 belonged to adults and 8 to children. The sex of the former was not recorded, but of the latter, 6 were females. In his historical notes on tumors of the bladder, Thompson relates about a dozen cases, all males, from the first operation performed by Corvisart in 1639 until his own first case, in 1880.

From all these statistics we simply conclude that vesical disease occurs more frequently in men than in women. This may be owing to the frequency of disease of the prostate causing greater obstruction to the flow of urine, and the greater length and narrowness of the male urethra, which in turn increases the tendency to disease of the bladder, from retention of urine, calculi, etc. Whether benign primary tumors are more common in men is doubtful, although it seems that primary carcinoma is more frequent in the former than in the latter. Secondary carcinoma is probably more common in the female, owing to the greater frequency of primary carcinoma of the uterus and vagina, from which the disease may extend to the bladder and the urethra. It is difficult to form any estimate from statistical reports as to the comparative frequency of benign and malignant growths, on account of great discrepancy both among microscopists and clinicians regarding the essential characteristics necessary to determine their benignity or malignancy.

Whilst all authorities admit that the bladder may become subject to the development of benign tumors, some deny that the bladder ever becomes primarily the seat of malignant disease. Others, again, assume that a malignant tumor may form the case upon which fungosities may spring, which present microscopically the appearance of non-malignant growths. The greatest point of contention is the so-called "villous cancer" or villous tumor, called by the first name by those who assert its malignancy, by the latter by those who claim its benignity. Klebs, for instance, denies the occurrence of primary carcinoma in the bladder in any form. Rindfleisch says that papilloma of the bladder is sometimes also called villous cancer, but a better term would be villous tumor, because the growth has nothing to do with carcinoma, for even a superficial examination will show that it consists of nothing besides branches of villi. He admits, however, that a papilloma may develop into an epithelioma, or the two may exist together. He also mentions the observations of other authors, that the mucous membrane over a subjacent carcinoma may develop into a papilloma, but states at the same time that he has not witnessed its occurrence. According to Virchow, a papilloma is at first a simple hyperplasia caused by the irritation of a neighboring carcinoma; but afterward it may become converted into a true villous cancer, if the carcinomatous growth underneath invade the connective tissue of the papillæ. "This change," he says, "most commonly takes place in the stomach and bladder." It is a curious fact that these two organs are normally said to be devoid of papillæ. Birch-Hirschfeld says: "Occasionally the base of a papilloma undergoes cancerous infiltration, either the villi proliferating on a cancerous base, as happens in other mucous membranes, or the carcinoma develops subsequently in the groundwork of a papilloma." Ro-

kitansky, after enumerating the following neoplasms which may occur in the connective and submucous tissue—polypoid and papillary excrescence of the mucous membrane, fibroid tumor, epidermidal degeneration (cholesteatomata), lymphoid formations, and cysts—states that *primary carcinoma of the bladder is not rare*, in the form of a medullary villous cancer, which is usually situated in the trigonum or its vicinity. Very rarely this form of cancer springs from the submucous connective tissue, and extremely rare is a fibrous, carcinomatous degeneration of the walls of the bladder. Secondary deposits are common in carcinomata of the sexual organs of women. Very frequently the bladder is infected *ex contiguo* by a medullary carcinoma of the uterus, or a medullary or colloid cancer of the rectum.

From all this it may be seen that the papillæ themselves alone are no positive evidence of non-malignancy, as they may complicate cancerous growths, or form a part of them. Some confusion also seems to exist regarding the terms papilloma and villous tumor, these terms being regarded as synonymous by some whilst others make a distinction, calling a papilloma a benign growth, whilst a villous tumor is a form of cancer. As the papillomata differ among themselves, depending upon the greater or less amount of fibrous tissue and the preponderance of epithelial proliferation, it would be expedient to make a division between the two. Sir Henry Thompson has made this distinction, after having had all of his twenty cases carefully examined by competent microscopists. He ranges all tumors of the bladder under two heads, which he calls homœoplastic and heteroplastic. Homœoplastic are such tumors as consist more or less of elements identical with the normal tissues of the bladder; heteroplastic, those which consist more or less of elements never found in the tissues of the healthy bladder. To the former, then, would belong the papillomata, from their nature being homologous with the normal tissue, benign in character; to the latter carcinomata, heterogeneous and consequently malignant. Papillomata are again subdivided into two forms, the fimbriated variety, ordinarily known as the villous growth, and the fibro-papillomata, or ordinary, simple papillomata, so-called. This classification would dispose of the villous tumor, ranging it under the head of benign growths. But the same author recognizes a third variety, which he calls the "transitional type." In this form, although the base is still homologous, with the normal bladder, there are certain cells which are foreign to this structure. He states, however, "that the mere presence of papillæ on a tumor, whether met with in the simple or long fimbriated form, does not characterize a growth, because they may be met with springing from the surface of heteroplastic growths, as epithelioma or cancer. The distinguishing feature of the transitional type is the arrangement of the ground-substance and the presence of irregularly shaped cells, which do not belong to the normal tissue of the bladder on the one hand, or to distinct new-growths on the other."

From what has already been said, it may be inferred that, as a rule, homœoplastic growths are benign in character; heteroplastic, malignant; although there may be exceptions, for a dermoid growth is heteroplastic, and yet not malignant. Such a tumor has occasionally, though rarely, been observed in the bladder, either as a result of a bursting into this organ from a locality in its vicinity, as dermoid cysts of the ovary, or a primary development of the tumor in the walls of the bladder itself. In this connection it might not be uninteresting to cite the opinions of some American authors. Speaking of villous growths in the bladder, Van Buren and Keys say, "There is nothing cancerous about their structure. Their cause is unknown. They never lead to secondary cancerous deposits elsewhere. They do not spontaneously ulcerate. The lymphatic glands are not implicated. There is no characteristic cachexia. When they kill, death seems to be due partly to a loss of blood and exhaustion from pain."

Skene seems to be undecided as to the cancerous or non-cancerous character of villous tumors, for, after calling attention to the difference of opinion between the German and some English authorities on one hand, and the American authors just quoted on the other, he ranges them under the head of carcinomatous growths, stating, "not that I am satisfied that they are malignant, but for lack of positive evidence of the new idea, temporarily at least, adhere to the old one."

These preliminary remarks are induced by the history of an interesting case which I am about to report, which presents a field for study not alone to the clinician, but also to the microscopist. The obscurity of the symptoms in the beginning, the presence of physical symptoms which suddenly disappeared and left no trace of their previous existence, and the successive pathological changes which occurred in the continued growth and recurrence of the tumors after removal, prompted me, for a better understanding of the case, to trespass for a little while upon your patience in travelling over a ground on which, perhaps, many of you are more at home than myself. I will not, therefore, tax your patience any longer, and at once pass to the report of the following case:

Mrs. M. S., German, aged fifty-two years, widow, was admitted to St. Mary's Hospital, February 3, 1887. She was extremely emaciated, and her countenance bore the expression of great suffering. Her general appearance was both anæmic and cachectic. The patient, who was a lady of more than ordinary intelligence, gave me a clear and interesting history of great suffering from a chronic disease of the bladder, and, as evidence, showed me a vial containing a large number of small, fleshy bodies, varying in size from a filbert to a chestnut, which she had passed from the bladder within a short space of time. Besides these small tumors, the vial contained a fluid having the appearance of muco-pus. In reciting to me the history of her complaint, she stated she had been under the treatment of Professor Winckel, formerly of Dresden, now of Munich, who had operated upon her for tumor of the bladder, and had described her case fully in his work on *Diseases of the Female Urethra and Bladder*, and in Billroth's *Handbuch der Frauenkrankheiten*. As I

was fortunately in possession of this celebrated work, I consulted it on my arrival home, and from it I borrow the following clinical history of the case up to the time she passed out of the hands of the distinguished German gynecologist.

"*Large papilloma of the posterior wall of the bladder; rapid dilatation of the urethra by means of the finger, and extirpation of the growth; recovery of the patient.* — Mrs. M. S., aged thirty-nine years, from New York, suffered when a child from a severely itching eruption, probably urticaria. When four years of age, after eating some unripe plums, she was seized with severe pains on micturition, which disappeared in the course of several weeks, after proper medicinal treatment. In her fifteenth year she had regular periodic attacks of fever, lasting one month. Her menses first appeared in the beginning of her sixteenth year, and since that time returned regularly every twenty-six days. In 1866 she had an attack of cholera. In 1868 she was married, but just previous to this event, *she fell with the full weight of her body against a corner, receiving the blow upon the right side of her body.* At that time she feared that she had received an internal injury. The pain, which was very severe at first, soon, however, disappeared. On the 10th of May, 1869, seven months after her marriage, she was delivered of a living child without artificial means, the duration of her labor being eleven hours. The abdomen remained enlarged after this labor. In consequence of mental depression, attributed to the death of her child, she experienced for the first time, in July, 1869, *a feeling alarming weakness in the right side of the lower part of the abdomen*, and was absolutely unable to emit a loud word or walk a step. This condition of weakness was frequently repeated, and soon was accompanied by severe cramps in the whole body. Some weeks later she says she found in her urine small granules of pus, about the size of a pin-head, to which a small amount of blood was constantly adherent. A year later she was seized, upon the slightest exertion, with hot, burning stitches, proceeding from the urethra upward, and passing to the right, which caused her to cry out aloud. The abdomen grew large and very painful, but the chief pain was always situated in the lower part of the bladder and near the urethra. Appetite was enormous, sleep heavy and profound. In the beginning of the year 1872, the patient, according to her own report, first plainly felt, during micturition, a crowding of floating bodies toward the orifice of the urethra during the flow of urine; sometimes this occurred so rapidly that the bodies completely obstructed the urethra. After this a spasm of the sphincter took place, which relaxed only after drinking a large quantity of hot water and the local application of a sponge dipped in hot chamomile-tea, after which the urine was again completely voided. The following symptoms are described by the patient herself; she says: 'Soon afterward a new affliction set in. Every morning, when increased action of the bowels begins, and the gases that are formed seek an outlet, they do not escape through their natural outlet, but, like a stream of burning lava, pass from the upper right side into the bladder, where they scatter between the foreign bodies, as the smoke from an engine encircles the tops of trees. Even at that time I experienced, in the midst of the most horrid pains, the branched and tree-like growths, but was laughed at or decried as insane when I described them. About this time I discovered, in front of the cushion encircling the orifice of the urethra, a tumor highly inflamed, resembling in shape the end of a quill; I touched it with nitrate of silver, and in three or four weeks, after having previously passed a great quantity of blood and pus with the urine, the first three granulations, the size of a bean, forced their way through the urethra, causing labor-like pains. A few pieces followed the next day. I was now greatly relieved, but the pains reappeared after one month. October 23, 1872, Dr. de Moor, of New York, after a careful examination, declared my disease to be an *enlargement of the right ovary.* He asserted that *the whole ovary had already descended into the bladder.* I was painted with tincture of iodine, and, after one month, suddenly the morning pains, already described as due to the passage of wind, ceased, and have not returned since that time."

"The patient's condition remained the same up to the time that I first saw her, in the summer of 1873, four years after the inception of the trouble. She was of medium height, had a considerable amount of gray hair, her features were pale, and bore the marks of suffering, although her nutrition was rather good. The abdomen was tense, with a considerable amount of adipose tissue, which rendered the detection of a tumor difficult. Touching the urethra and examining the vagina caused such excruciating pains that she anxiously begged to be put under the influence of chloroform, which was given her.

"To the right of the uterus, projecting somewhat above the line of the pelvic inlet, I could feel a tense, elastic, and immovable tumor, which seemed to me to proceed from the right ovary. The urine removed by the catheter was clear, containing no foreign bodies, whereas the patient had shown me an abundance of warty bodies, each about the size of a hazel-nut, filling an ordinary tumbler, which had passed from her urethra from time to time. My diagnosis, therefore, coincided with that of Dr. de Moor, that a papillary ovarian cyst had perforated the wall of the bladder, and the papillary tumors had been discharged in this manner. But as I could feel no tumor in the bladder with the catheter, and found nothing foreign in the urine, there was no cause for operative interference.

"During the following eight months gradually more fragments passed from the bladder, at one time amounting to enough to fill a 100 grammе (3-ounce) vial. Meanwhile, bloody discharges occurred, coming away in drops, and more at a time, and causing such intense pain that the patient determined to submit to any operation that would promise her a relief from trouble. Consequently, on June 10, 1874, for the purpose of closer observation, I admitted her to my clinic. She then had no fever, had a good appetite; her bowels were sluggish, but were easily moved by large injections. She was restless at night, but soon improved under small doses of tincture of opium. After copious draughts of hot drinks, the patient passed, June 11, 1048 grammes (33 ounces); June 12, 1180 grammes (37 ounces), and June 13, 1350 grammes (42 ounces), of urine, containing a mixture of pus and blood, but no solid masses.

"June 17. I had her put under chloroform, and, after having first had the urine drawn off with a catheter, carefully introduced the left index finger into the dilated orifice of the urethra and penetrated the canal in the course of two or three minutes without exerting any undue force, whereupon I could feel on the *posterior wall of the bladder, about the region of the orifice of the right ureter*, a large movable, villous, soft tumor, which could be crushed and separated into smaller pieces with the finger. After this had been done in all directions, I removed the finger and injected through the syringe about 150 grammes (5 oz.) of warm water, then introduced a Carus bivalve dilator uteri into the bladder and allowed the severed fragments to flow out through the blades in large quantities. The finger was again inserted to remove all remnants, and as the pedicle of the tumor constantly evaded the finger, I attempted to introduce a small pair of forceps

along its side. Although I succeeded with some difficulty, I could not then feel the growth with the finger, and therefore had to remove the instrument again. In three or four successive attempts I succeeded in crushing off all the sensible projections on the posterior wall, and removing them from the bladder in the manner described above. Hemorrhage was moderate; the sphincter promptly closed immediately after the withdrawal of the finger or dilator, so that none of the injected fluid passed off. At the close of the operation I detected a small fissure *in the upper portion of the mucous membrane of the urethra and a small depression in the lower left border of the urethral orifice.* The patient had vomited once during the anæsthesia. This vomiting recurred several times in the following night, the next day, and the second night following. This, however, constituted the sole reaction which the patient showed; for the pulse ranged constantly between 72 and 80, the patient was wholly without fever, had but slight pain on micturition, and the urine which had in the beginning contained considerable blood, small clots and fragments, improved gradually in appearance. Warm baths were very refreshing to the patient.

"I was highly interested to find during the examination made during anæsthesia, before the operation, that the uterus was entirely healthy, normal in size and mobility, and *nothing* to be found of the tumor on the right side. It is true the bladder seemed to be depressed at the spot where the pedicle of the tumor appeared to be inserted, but no connecting passage or adherent bands could anywhere be found.

"The nature of the tumor removed corresponded exactly with the masses discharged previously by the patient. At first sight it can be recognized as a *papillary* tumor, of which the separate papillæ are somewhat distended about the size of a millet seed to a grain of barley. The papillæ consisted of lamellated and proliferated pavement epithelium on the surface, with a very delicate connective tissue ground, containing several large vessels which send branches into the papillæ. Had there been a cystoma of the ovary in this case, there would undoubtedly have been a recurrence of the growth and extension in another direction after the primary fistulous opening into the bladder had cicatrized; for I have repeatedly witnessed the perforation of such cystomata into the rectum or umbilicus after the communication outwardly had been cut off. Such was not the case in this instance. The patient has recovered entirely; she lives in my neighborhood, has presented herself two years after operation, and there is *no trace of an ovarian tumor,* nor a recurrence of papilloma of the bladder."[1]

To continue this interesting history as given by Professor Winckel, the first part of which the patient had furnished him in writing, she made to me the following oral statement. After leaving Professor Winckel she enjoyed an immunity from the disease for about eight years, but then gradually the former symptoms again set in; pain on micturition, associated with the discharge of pieces of tumor. She managed to do without treatment for a year, after which she was compelled again to seek medical advice, but received no benefit until she was finally referred again to Professor Winckel by her physicians. She revisited him; he made a thorough examination, but, to her knowledge, he removed nothing except allowing some pieces to pass away spontaneously through the dilated urethra. He at first thought of making a cystotomy, but soon abandoned this idea and recommended simply injections of a solution of salicylic acid. She continued this treatment nine months, under which she improved slightly, so that she could again move about, though with great pain. As the salicylic acid gradually lost its efficacy, she of her own accord injected a solution of nitrate of silver into the bladder for over two years—from May, 1884, to July, 1886. This in turn gave her some relief, but as her trouble finally grew steadily worse, she consulted Professor Küster, of Berlin. This gentleman at once ordered the discontinuance of the nitrate of silver and again ordered salicylic acid injections. She yielded reluctantly to his order, but failing to obtain any relief she again had recourse to injections of nitrate of silver. This time, however, they failed to give her any relief. She then resumed the injections of salicylic acid, and continued them up to shortly before her admission to the hospital. She left Europe in September, 1886, arriving in Cincinnati the same month. Her trouble gradually became worse until she became bedfast on November 2, 1886. Her condition remained unchanged, except that in Christmas week incontinence of urine set in, which continued to the time she was admitted to the hospital, February 3, 1887.

The first thing that struck me when I entered her room the next morning after her admission, was a terribly penetrating odor which pervaded the whole room. Searching for the cause I found a vesselful of thick purulent urine on the floor at the bedside, into which the urine flowed as it passed from her bladder into a rubber cloth over the bedding. Notwithstanding her miserable condition, the patient was of a somewhat cheerful temperament, thoroughly resigned to her fate. Her pulse, although weak, was regular and not rapid, her appetite good, her bowels somewhat constipated, but easily moved by injections, and her sleep good so long as the fragments in the bladder found free exit from the urethra. After ordering the necessary disinfectants, I proceeded to obtain the history as it has been given. As my interest had been aroused I proposed an examination to the patient, to which she reluctantly consented upon the condition that I would administer chloroform. Thereupon I called Dr. Jones to my assistance and he administered the anæsthetic. The examination revealed the same state of affairs as given in the history of Professor Winckel. The uterus was small but normal and perfectly movable; no ovarian complication could be found—in fact, the ovaries could not be felt. The urethra showed several lacerations in its border and was dilated, but not sufficiently to admit the index finger. I consequently introduced a bivalve urethral speculum and gradually dilated the canal. During the process a number of round bodies passed out through the blades of the instrument varying in size from a

[1] The translation of the history of this case was made from the first German edition of Winckel's work, before the English translation appeared. In Vol. X. of the Cyclopedia of Obstetrics and Gynecology, published by William Wood & Co., just issued, which is a translation from the second German edition, I find the following additional sentence: "In July, 1882, eight years after the first operation, she returned to me in trouble again. I found the entire posterior vesical wall diffusedly infiltrated with a new growth, extirpated a part, and found that there was carcinomatous degeneration. She moved away soon afterward, and I do not know whether she is still alive."

grain of corn to a hazel-nut. After the dilatation had been performed I introduced my index finger and came at once upon a large field of roundish bodies in the posterior wall of the bladder, which rapidly gave way to pressure. At this stage of the examination, however, the patient seemed to succumb to the influence of the anæsthetic, so that further exploration had to be immediately suspended and artificial respiration instituted. With some difficulty the patient was made to rally and put at once to bed, thus abruptly terminating the examination. The patient soon recovered, and owing to the discharge of a great number of fragments, expressed herself as somewhat relieved. Nevertheless she soon experienced her former difficulties, the pain becoming most intense when large pieces blocked the urethral orifice. As a disinfectant measure a solution of thymol was injected into the bladder a number of times daily by the patient herself, who had become skilled in the use of the reflex catheter. Other agents were occasionally substituted, but she declared that she obtained the greatest relief from the thymol injections, and therefore used them diligently.

During all this time there was no hæmaturia, except a slight amount at one time, every specimen of urine having been carefully inspected for the purpose of accurately settling this point. The aforesaid warty growths continued to pass out of the urethra assisted by several daily irrigations of the bladder which the patient diligently instituted. These bodies, according to the patient's description, had at first been firm and of an opaline appearance; now they gradually became darker in color and more friable, but still remained of variable size. To determine the microscopic character, several of the older specimens which the patient had brought with her were given Dr. Kebler for examination, who reported that he found no evidence of anything but papillomatous growths, with no positive proofs of malignancy. As the patient continued to discharge these bodies, several later specimens were given to Dr. French for examination, whose report will be found appended to this history.

The patient's condition remained about the same, with the exception that she gradually grew weaker, and the treatment was simply symptomatic. Nothing but stimulants were administered in the meantime, until she finally succumbed by exhaustion on April 3, 1887.

A post-mortem examination was made by Dr. French, the Pathologist of St. Mary's Hospital, on April 4th. On opening the abdominal cavity the peritoneum was found thick and adherent to the bladder, which was considerably larger than normal, with much thickened walls. The outer surface of the bladder was roughened by the inflammatory product and the walls appeared very friable. The dimensions of the organ were as follows: Length of cavity, 7¼ inches, width, 5 inches, thickness of the walls over ¾ inch, making the external measurement about 8 x 6 inches. The entire internal surface was covered with these round papillomatous bodies, varying in size from a pea to a hazel-nut. The bladder, ureters, and kidneys were filled with pus; the ureters were dilated to a size large enough to admit the finger, and the pelvis of each kidney contained a large accumulation of pus, with several small metastatic abscesses in the cortical portions. The ovaries were small and shrunken, and bore no evidence of cystic degeneration. The uterus was externally of normal appearance, but on section a number of small fibroids about ¾ of an inch in thickness were found imbedded in the walls. The lumen of the cavity was correspondingly lessened. The organs of generation showed no evidence of disease, the degenerative changes having taken place only in the urinary organs; the bladder, ureters, and kidneys. The inguinal lymphatic glands were enlarged.

Several microscopic sections were made from different parts of the specimen. The papilla-like bodies presented the same characteristics as did those examined some time before the death of the patient. The structure of all the specimens was that of a rather soft, medullary carcinoma. No other tissue could be found.

A study of the case just mentioned presents several interesting features: first the question as to the cause of the trouble; secondly, the duration; and finally, the pathological character of the tumors.

If any stress be laid upon the very beginning of the history, the bladder trouble must have begun at a very early age. The patient stated that when she was four years of age (forty-eight years before her demise) she was seized with severe pains on micturition, lasting a number of weeks before they disappeared under appropriate treatment. She attributed this to the eating of unripe plums. Perhaps no significance would have been given to this symptom, if such a serious vesical disease had not set in, yet it is not impossible that even at this early age there was disease of the bladder which was perhaps congenital. Hypertrophy of the bladder and polypoid growths have been observed in very young children and even detected at autopsies made upon newborn infants. Winckel mentions a case where two mucous polypoid growths, one the size of a pea, were found in the body of an infant born in the eighth month of gestation. Martini describes a case of dermoid tumor in a newborn child. Podrazki cites a case of J. Cooper, where a papilloma was found in a female child four years of age. Gross removed a number of mucoid polypi from a boy, and Billroth, a large fibroid tumor the size of a fist also from a boy twelve years of age. Owen describes a sarcomatous tumor in a boy who died when six years of age. According to the same author, Giraldès gives two examples of polypoid tumors; one protruded in a fungating mass through the meatus urinarius of a female infant. According to him, Burkett and others have reported similar cases. It is not impossible, therefore, that our patient had the beginning of her trouble at a very early age. It is true, the condition of the bladder at that time might have been only that of mucous hypertrophy, no foreign growths as yet existing to block up the discharge of urine, as this was the most troublesome symptom a long time afterward. Nearly twenty years ago (1868) the patient first met with an accident, a fall, to which the be-

ginning of her trouble could be unmistakably referred, but it was about three years later that a positive obstruction of the urethra could be felt, and this was preceded by the discharge of small particles of pus and blood in her urine, as early as one year after the receiving of the injury. There was evidently, therefore, an extravasation of blood into the wall of the bladder at the time the injury was received, and this gave rise to the development of the new growth. Hutchinson describes a case similar to Winckel's and mine, where a woman twenty-three years of age was suddenly seized with a severe pain while lifting a heavy weight and gradually developed the symptoms of papilloma of the bladder. The length of time elapsing between the receipt of the injury and the first obstruction may be explained by the fact that the neoplasm was not of sufficient size to cause any material obstruction to the flow of urine. In fact, the mechanical difficulty depends as much upon the situation of the growth as upon its size. Tumors upon the anterior wall and sides of the bladder are said not to offer the same degree of obstruction as those developing in the trigonum, which is the most common seat of attachment. Hence if the triangle between the orifices of the ureters and the neck of the bladder be not obstructed or detached patches be floated toward the urethral canal, the symptoms of difficult micturition caused by obstruction may be absent. Some cases have been recorded where tumors were found post-mortem in the bladder that had caused no symptoms during life.

The removal of the tumors in 1873 gave relief for a long time, and Prof. Winckel was justified in assuming that he had cured the patient when she remained free from a relapse for eight years. Then all the former symptoms reappeared and the tumors seemed to grow with increased rapidity. From this time another phase developed in the character of the neoplasm. There can be no question that from a microscopical examination made at the time of the first operation the tumor was benign, and this is further substantiated by the long lapse of time before a recurrence set in. It is very probable that a carcinomatous degeneration occurred in the bases of the papillomata removed, and this led to the rapid infiltration of the interior of the whole bladder, or possibly all of the growth was not extirpated and these remaining portions underwent cancerous degeneration.

It has already been stated that, according to some pathologists, a carcinoma may be secondary to papilloma, or *vice versa*, or both may exist together. This may explain why Dr. Kebler, to whom I referred the first specimen for examination, found no evidence of anything but true papillomatous structure, although Winckel had already detected a carcinomatous degeneration, when the patient revisited him the second time in 1882.

There was, however, no clinical proof of carcinoma, for the same symptoms and fatal termination could have occurred from the excessive proliferation of simple papillomata. A remarkable feature was the almost entire absence of hemorrhage. The patient stated to me that the loss of blood had never, except in the beginning, amounted to much, and only occurred later when large masses were torn away from the base at the time of operation. Such a thing as persistent hæmaturia was not observed.

The prognosis could, of course, be nothing else than fatal, and hence no further surgical attempt was made by me. When the pain from the obstruction was most severe, I reluctantly proposed a cystotomy, but the patient declined, stating to me, what has already been mentioned, that Prof. Winckel had contemplated performing the same operation but soon abandoned the idea. She requested that her last days be made simply as comfortable as possible, and welcomed the approach of death as a harbinger of peace and relief from long years of suffering.

THE TREATMENT OF PULMONARY CONSUMPTION, WITH A REPORT OF FORTY CASES.[1]

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This paper is devoted to a consideration of the therapeutics of pulmonary consumption, but the therapy of any disease is meaningless unless the underlying pathological conditions are correctly interpreted, and we shall, therefore, at the very outset, endeavor to outline, in as brief a manner as possible, the recognized principles of the pathology of this disease, and then follow with a discussion of those measures which experience has proven to have the power of controlling and of dissipating it.

Now, pulmonary consumption is generally an extension of chronic bronchitis into the alveoli, or is the product of acute catarrhal pneumonia. In either case, it is a catarrhal affection of the alveolar epithelium. The pulmonary capillaries become engorged, and the epithelial cells multiply and accumulate, and clog up the alveoli with their products. The filling up of the alveoli with these catarrhal aggregates produces small bodies which partake of the shape and size of the former. In this way one alveolus fills up after another, until a whole group or a cluster of them is involved, giving rise to roundish nodular bodies, which are so frequently mistaken for tubercles. They are not tubercles at all, in the technical meaning of that term, but are mere *accumulated inflammatory or catarrhal products*. This train of pathological changes is due to a disturbance of the relationship existing between the production and expulsion of epithelial products. If such a relationship were preserved, or could by any means be restored, it is evident that the disease would at once be called into abeyance. Thus far, the process is chiefly limited to the alveolar walls, their epithelium and their bloodvessels; but the continued accumulation of catarrhal products exerts a decided pressure on the surrounding pulmonary and bronchial capillaries, and the blood supply and nourishment are gradually diminished and finally cut off from these infiltrated areas which, in due course of time, become isolated and circumscribed foreign masses, prone to undergo a slow process of cheesy

[1] Read before the Pennsylvania State Medical Society, Bedford Springs, June 30, 1887.

degeneration, and leave behind cavities, large or small, according to the amount of tissue destruction.

In curing this stage of excavation that the true tubercle is brought to life. A specific poison is derived from the caseating catarrhal nodules, which is chiefly absorbed by the lymphatics. These vessels transport this specific element along their ascending courses as they arise in the alveolar wall, and twine around the walls of the bloodvessels and the bronchioles, and it is here, in the beginning, and in the channels of the lymphatics, that this poison incites new nodular growths, which are *genuine tubercles*, but differ from the yellow, or catarrhal nodules, already considered, both in genesis and in structure. They are evolved from interstitial connective or lymphatic tissue, and are growths, or a hyperplasia, and not mere epithelial or catarrhal aggregations like the so-called yellow tubercles.

It must be distinctly understood, however, that pulmonary consumption is such an intensely sectional disease that what has been said so far in regard to the catarrhal origin of the disease pertains almost exclusively to the apices of the respiratory organs. And it may, therefore, be laid down as a safe rule in the diagnosis and prognosis of chest diseases, that, in by far the great majority of cases, partial or complete consolidation of an apex denotes the first stage of pulmonary consumption. While it is not absolutely true that every case of apical infiltration terminates in pulmonary cavitation, it is enough for the practitioner to know that it is the beginning of a process which, if not checked, certainly tends to end there.

It is very evident, therefore, that the focus of disturbance in pulmonary consumption is an infiltration of the vesicular structure of the lung, and a consequent consolidation, and that the one great desideratum in its treatment is as to the best method of removing this; or, in other words, how is resolution of the affected part to be accomplished? In croupous pneumonia the intra-alveolar infiltration, which consists principally of a fibrinous infiltration, is quickly removed through a process of fatty degeneration; but in catarrhal pneumonia the infiltration does not consist of fibrinous exudation, but, as we have seen, of an accumulation of epithelial products, and, instead of tending toward fatty degeneration, it undergoes a process of caseation. The difference between fatty and cheesy degeneration is the line which divides the fatal nature of the latter from the non fatal nature of the former disease; and if the therapeutic art can devise a method by which the catarrhal infiltration can be resolved into a fatty, or into a calcareous instead of into a caseous degeneration, the problem of the treatment of pulmonary consumption will be forever solved.

The great obstacle to the successful treatment of pulmonary consumption, however, is the inability to introduce agents which reach and act on the focus of the disease, viz., on the seat of infiltration. Efforts have been repeatedly made to apply medicaments locally through the air-passages by inhalation, as well as through the blood, either by hypodermatic injection, or by gaseous enemata according to the now famous method of Dr. Bergeon. But we have already seen that the most pronounced seat of infiltration is entirely beyond the reach of bronchi or bloodvessels, hence, it cannot be expected that any of these methods have the power to antagonize the citadel of the disease, however capable they may prove themselves in removing some of its concomitants.

We have here then, in most instances, a condition which, to all intents and purposes, is a deposit of inflammatory products differing, in principle, in no wise from a similar deposit in any other part of the body, and the dictates of common sense point out that that which is useful in the one condition is also useful in the other. Every physician can testify to the inestimable value of counter-irritation, and of passive motion in producing resorption of chronic inflammatory deposits in joints, and in the external surfaces generally, and in consonance with this view we have, for a number of years, applied hot flaxseed meal poultices, as well as friction to the chest, in such affections, and, we believe, with the most gratifying results. There is reason for believing that these external applications have the power of increasing the circulatory, the lymphatic, and the cellular activity of the affected part, and, in this manner, gradually remove the most pronounced pulmonary infiltration.

The manner of making these external applications will be briefly described here. First then as to the poultice: This is made by boiling the ground flaxseed meal in a sufficient quantity of water to make a thick paste. Spread it quickly in a layer an inch thick between two pieces of flannel cut in the shape of a jacket, which is well fitted to the top, front, and back of apex, as well as to the anterior and posterior aspects of the affected lung. The edges are sewed or tied together, then it is adjusted to the chest, and the outside well covered with oiled-silk, or some thick woollen material, in order to prevent a too rapid radiation of heat. It must be changed every two or three hours, or sooner if it becomes cooler than the body. This process is to be continued from morning until night, when the poultice is taken off, and the chest is well wrapped with woollen flannel for the night, in order to avoid a sudden disturbance of the bodily temperature during the sleeping hours. The next morning the same programme is begun and continued in the same way for at least three weeks, and so much longer as is necessary. It is much more expedient to poultice during the day only, and allow the patient to rest and be free from the poultice during the night. In fact, this is very important, for if you insist on poulticing during the night also, you are very apt to worry and discourage the patient, and get him to refuse the application altogether.

In a course of five or eight days' poulticing, or perhaps sooner, the change in the physical signs will become most marked. Where previously there was heard nothing but a rough or bronchial respiration, sub-crepitation, perhaps crepitation, and mucous râles show themselves, leading one to suspect that the disease is advancing instead of receding. In the course of a short time, however, the whole part will clear up and become dry. Associated with

these changes in the physical signs, is an improvement in the patient's general condition. He experiences more freedom in his respiratory movements, the cough becomes easier, the expectoration looser, the appetite begins to improve, and he coughs less at night and sleeps better.

In addition to the application of moist heat, we also employ local or general massage once or twice a day. This has the happy effect of counteracting the constitutional lethargy present in phthisis, as well as arousing the local cell activity in the pulmonary organs. Dr. T. Henry Green, in his lectures on the "Pathology of Pulmonary Consumption," delivered in the Brompton Hospital for Consumption, in 1878, speaking of external treatment in this disease, says (p. 102):

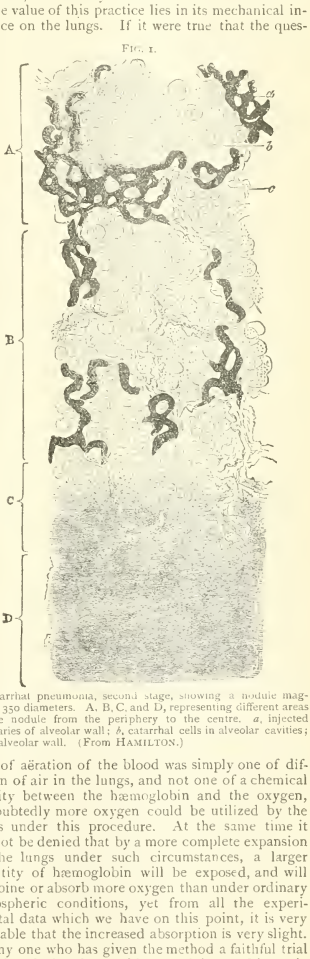
"That in these last named cases (cases where much intra-alveolar matter exists which is capable of removal) attempts to stimulate the circulation in the diseased lungs by douches and friction, and other similar means, such as have been recently advocated by a Dr. A. von Sokolowski, would appear to me to be more in accordance with the teachings of pathology."

Next in importance in the local treatment of this disease, comes the inhalation of medicated air under a very slight pressure, and the introduction of gases by means of enemata. The pathology of the disease as well as the experience in its treatment, teaches, however, that the principal value of both of these methods lies in their power to disinfect the catarrhal products which are located in the bronchial tubes, and in such cavities as may be in communication with these tubes, and that they have but very little, if any, decided influence on the catarrhal products of a solidified lung.

Fig. 1, which is a true representation of a completely infiltrated and caseating nodule with its surroundings,[1] shows us that neither of these channels has any direct communication with the truly solidified portion of the lung, yet it also shows us that there are a few permeable bloodvessels which penetrate nearer to the centre of caseation than the bronchi, hence on the surface it appears that any medicament which is contained in the blood will be carried further into the territory of disease than it will be conveyed by the air tubes. It must not be forgotten, however, that substances administered by inhalation are also absorbed by the blood, and while they do not come in contact with these diseased centres on their first introduction, they will just as certainly come in contact with them ultimately, as if they had been thrown directly into the circulation by means of the hypodermatic syringe, or indirectly by means of gaseous enemata.

One of the most valuable acquisitions to the local treatment of chest disease is the inhalation of compressed and the exhalation into rarefied air, or *vice versâ*. Much has been said and written in regard to this subject, and the opinion is generally held that it is a means of supplying a larger amount of oxygen to the blood than is obtained through ordinary respiration; there is good reason for believing, however, that nearly the whole sum and substance of the value of this practice lies in its mechanical influence on the lungs. If it were true that the ques-

FIG. 1.



Catarrhal pneumonia, second stage, showing a nodule magnified 350 diameters. A, B, C, and D, representing different areas of the nodule from the periphery to the centre. *a*, injected capillaries of alveolar wall; *b*, catarrhal cells in alveolar cavities; *c*, an alveolar wall. (From HAMILTON.)

tion of aëration of the blood was simply one of diffusion of air in the lungs, and not one of a chemical affinity between the hæmoglobin and the oxygen, undoubtedly more oxygen could be utilized by the lungs under this procedure. At the same time it cannot be denied that by a more complete expansion of the lungs under such circumstances, a larger quantity of hæmoglobin will be exposed, and will combine or absorb more oxygen than under ordinary atmospheric conditions, yet from all the experimental data which we have on this point, it is very probable that the increased absorption is very slight.

Any one who has given the method a faithful trial has found abundant evidence of its usefulness in

[1] On Catarrhal Pneumonia and Tubercle in the Human Lung, by D. J. Hamilton, M.B., F.R.C.S. Ed. Practitioner, vol. xxiv, page 258.

nearly all forms of chest diseases, and especially so in the treatment of the disease under consideration. It gives complete ventilation to, and increases the capacity of, the chest, it relieves the dyspnœa, and acts as a powerful tonic to the whole body. It should be employed with great care, and not be used during a high temperature, nor in an active inflammatory condition of the lungs, except under the very lowest pressure. Indeed, it seems that we have obtained the very best results from it after the activity of the disease had receded, and when convalescence was well under way.

Another important method in the local treatment of this affection is the application of the constant electric current to the chest, according to the recommendation of Dr. Bastings, of Brussels. This procedure consists in chiefly employing the ascending current, and it has special value in those cases in which there is associated with the internal trouble immobility of the thorax, myalgia, or intercostal neuralgia.

In connection with the local treatment we must not lose sight of the marked benefit which may be derived from internal treatment, especially in so far as the question of supplying force and matter to the body is concerned. Pulmonary consumption is preëminently a wasting disease, not necessarily of the lungs but of the whole frame, and any food or medicine which supplies this constant waste, or facilitates digestion and assimilation, is very strongly indicated, and for this reason nutritious foods, cod-liver oil, hypophosphite preparations, etc., are of such great value, if used with discretion. So far as the force-producing value of foods is concerned, there can be no question that cod-liver oil, and the fatty and saccharine foods rank very high, but very frequently we find an aversion to the first, and fermentation following the ingestion of the last two; and hence they must be in a great measure avoided. The non nitrogenous foods which are least likely to undergo fermentation are cream, butter, and alcohol, and the dietetic value of these articles increases in proportion as it becomes necessary to exclude the other foods of this class from the dietary list. The best nitrogenous foods are beef, mutton, eggs, oysters, milk, bread, peas, beans, etc. Animal food often renders the best service when it is chopped into a pulp and consumed when raw. In cases of complete anorexia forced feeding, either by the stomach or by the rectum, must be resorted to, and the food administered regularly three or four times a day, with the addition of a few drops of muriatic acid and a little pepsin. Milk alone does surprisingly well sometimes in this form of feeding.

I have the records of forty cases which have been treated in accordance with the plan here advocated, and we believe that the practical results which it achieved warrants us in recommending it to our fellow-practitioners. The first twenty of these cases were reported by us in a contribution to THE MEDICAL NEWS of October 10, 1885, and we take pleasure in stating that the prognosis which we then gave in regard to these cases has been fully confirmed by subsequent observation. Of the entire forty cases thirty-two recovered. The sixteen of the first twenty cases who recovered have been under occasional observation during a period of from two to nine years, and, so far as we know, are all well at the present time.

In conclusion, we beg to state that these forty cases do not embrace the whole number which we treated according to this system of medication, but, with a few exceptions, include all those of which we possess a complete history in each individual case, from the beginning of the treatment up to the time of death, or to that of recovery. The considerable time which has elapsed in the majority of these cases since suspension of treatment is an important indication as to the value of the latter. We do not by any means parade these statistics with a view of showing that this is a new means for resurrecting the dead consumptive, nor are we unmindful of the fact that just as long as the professional mind is willing to be blown about by every passing therapeutic breeze, so long will a successful solution of the treatment of this disease remain futile; but we earnestly believe that the system which we advocate here, and which has withstood the test of experience in our hands for nearly half a score of years, offers greater prospect of success than any other, and shows that a great deal more can be than has been done for this unfortunate class of patients

TRANSIENT BENIGN PLAQUES OF THE TONGUE (CASPARY)—EXFOLIATIO AREATA LINGUÆ (UNNA).

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I DESIRE to call attention to a rare, curious, and but little known affection of the tongue, which, within a comparatively recent period has been described by various authors under the names lingual lichenoid, transient benign plaques of the tongue, exfoliatio areata linguæ, wandering rash, annulus migrans.

That the disease is a rare one and little known, may be inferred from the fact that but two cases have been reported in this country up to the present time. This infrequency, and the remarkable character of the affection, have induced me to report with some minuteness the following case, which, having been under observation at short intervals for more than two years, has afforded me ample opportunity to study its various phases and note its peculiarities.

E. C. J., aged forty-two, railroad engineer, in excellent general health, weighing about 175 pounds, consulted me in June, 1885, with regard to a peculiar eruption upon the tongue, which he had first noticed a few weeks previously. Upon inspection, the tongue presented a small, pin-head sized, whitish, slightly elevated lesion, which resembled at first glance an ordinary vesicle upon the mucous membrane. Within a day or two this whitish elevation, having increased to the size of a pea, began exfoliating, leaving a circular patch, deprived of epithelium, surrounded by a narrow, slightly elevated white border.

This patch increased in size from day to day, until it had attained the size of a dime, when it became

stationary; in a few days the tongue gradually resumed its normal appearance. After an interval of ten to fourteen days, during which the lingual mucous membrane seemed perfectly healthy, a new lesion, similar to the first one, made its appearance; ran the same course, and disappeared in the same manner. The eruption required from ten days to two weeks to pass through its various stages. The disease has continued to come and go in this manner until the present time, exhibiting considerable regularity in its different phases. There has never been more than one plaque present at a time; and the disease has been strictly limited to the right side of the organ, never crossing to the smallest extent the median line. Recently, the lesions have been less regular in outline than formerly, but otherwise there has been no change in the appearance of the malady since its first manifestation over two years ago.

The patient had noticed that slight stomachic disturbances, manifest chiefly through eructation of gas, preceded by a few days each new outbreak. Subjective symptoms were almost entirely wanting; but occasionally slight tingling and pricking sensations were present.

In an inaugural dissertation in 1872, under the title of "An Unnamed Affection of the Lingual Mucous Membrane," Bridou first called attention to the disease under consideration, his communication being based upon the study of five cases. Since that time the affection has been further studied, and cases reported by Caspary and Unna in Germany, Gubler, Vanlair, Parrot, and Molénes in France, and by Barker and T. Collcot Fox in England.

Up to the present time the only notice of the disease in the literature of this country is a short article, reporting two cases, by Kinnier.

The affection usually first manifests itself as a small, yellowish or white, slightly elevated patch, ordinarily situated near, or upon the tip of the tongue; this patch soon begins to desquamate, leaving the surface upon which it is seated smooth, shining, and of a bright red color. The lesion enlarges peripherally, preserving its circular outline until the edge of the organ is reached. There may be several lesions at the same time upon the tongue; or, new ones may appear before the old ones have disappeared, and these patches uniting, produce the peculiar appearance which has suggested the name, "geographical tongue."

The yellow hue of the border around the areas denuded of epithelium, upon which Caspary lays considerable stress, is by no means a constant feature—in my own case this border was white; and Unna states that he does not always find the yellow margin described by Caspary, "but more frequently this margin is bluish, grayish, or even silvery white."

In the great majority of cases, subjective symptoms are very slight, or even entirely absent; but in a few cases intense itching of the tongue, with profuse flow of saliva accompanied the appearance of the eruption; and in one case, reported by Vanlair, there was decided pain.

The individual lesions usually run a rapid course; a few hours sufficing often to change the entire aspect of the disease; but, as is evident from the case reported above, this rapid course is not invariable, and each lesion may last a week or more.

The dorsal surface is the usual site of the eruption, but the under surface may also be affected through the extension of the plaques to this latter locality; as a rule, however, the lower surface is not involved.

Owing to the circular shape of the lesions and the mode of extension, the disease has been supposed to be identical with tinea circinata; but thus far, every effort to find the fungus peculiar to this latter affection in the lingual epithelium has failed. Nor has any other fungus been found which may not be found upon the normal tongue. Indeed, apart from the failure to find any microörganism peculiar to this affection, the course of the malady makes the idea of its parasitic origin extremely improbable. The complete spontaneous disappearance for days, weeks, and even months; its strict limitation to the lingual mucous membrane; and the absence of all evidence of contagion, are sufficient to prove its non-identity with tinea.

Although there is a decided resemblance between this affection and some of the syphilitic lesions of the lingual mucous membrane, most observers unite in the opinion that it is entirely independent of syphilis. Parrot, however, whose observations were made in the Hospital for Foundlings, is an exception, and unhesitatingly affirms his belief in its syphilitic nature, declaring that for him it is only a manifestation of syphilis; and he names the disease accordingly desquamative syphilis of the tongue.

I do not think the malady in any way dependent upon syphilitic infection. My patient, I feel quite sure, was free from any specific taint. There was no evidence of such in his own person, nor did any members of his family—he was the father of two children—show any signs of syphilis. Moreover, specific treatment was without effect.

In view of the frequency with which digestive disturbances preceded or accompanied the eruption upon the tongue, a causal relationship between the gastric disorder and the lingual affection seems quite probable. My patient was able to predict the appearance of the plaques upon his tongue by means of the slight stomachic derangement, noted above, which he usually experienced some days previous to their appearance. All three of the cases reported by Molénes suffered from dyspepsia; and in one of them a dyspeptic attack was always accompanied by the appearance of these patches upon his tongue.

Although the malady is usually described as a disease of childhood, I think an examination of the ages of the cases reported makes it evident that it occurs with almost equal frequency among adults.

Of the fourteen cases reported by Unna, but two were children; and Molénes three cases were adults.

That the disease is not a common one, may be learned from the statement of Collcot Fox, that he had met with but ten cases in three years. Although I have examined the tongues of many persons in the past two years, with a view to the discovery of other cases, I have not met with any other example of the malady than the one reported in this paper.

The disease is, as a rule, but little influenced by treatment, local or constitutional. Unna claims to

have derived benefit from the application of sulphur to the diseased mucous membrane. In my own case local treatment was entirely without effect; but the internal administration of arsenic seemed to lengthen the intervals between the attacks. Before the use of this remedy the paroxysms appeared with great regularity every ten days or two weeks; but soon after beginning with pil. arsenicos. $\frac{1}{10}$ gr. the interval between the attacks was prolonged to three or four weeks, and the individual lesions ran a shorter course.

3721 SPRING GARDEN ST., September 2, 1887.

THE COMPOSITION OF GLEDITSCHINE OR STENOCARPINE.

BY JOHN MARSHALL, M.D.,

DEMONSTRATOR OF CHEMISTRY IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

THE introduction within the last few months of a substance having the names above given and claiming to rival cocaine as a local anæsthetic has brought forth quite a number of papers descriptive of its powers from members of the profession who have used it clinically, notably the articles of Dr. Knapp, of New York, and several other observers of almost equal eminence. All these writers, and those of the profession in this city, reported that it possessed the power of anæsthetizing mucous membranes in much the same manner as cocaine, and that the mydriasis produced by it was not only more marked but more prolonged than with the former drug.

Believing that a drug promising so much should be studied as to its influence on the general system, Dr. de Schweinitz and Dr. Hare began the necessary physiological tests. No sooner did they inject some of the so-called stenocarpine solution into the jugular vein, than the typical manometer tracing produced ordinarily by atropine developed itself, and it was, therefore, requested that at least a few tests should be applied to determine its chemical constituents. The following results, obtained in the chemical laboratory, will, I trust, prove to the profession that they have once more been duped by a specious fraud.

Solution of stenocarpine, labelled two per cent., is a straw-colored liquid, having an odor resembling the leaves of erythroxylon coca. Upon the addition of an aqueous solution of bromohydric acid, containing free bromine, a dense, yellowish precipitate was formed, which was almost a solid mass. Upon diluting the so-called stenocarpine by another addition of the bromohydric acid reagent, the yellowish precipitate was produced, of course, in less amount, and, upon standing, small, microscopic crystals, characteristic of atropine, were observed, mixed up with the amorphous precipitate.

According to Niemann,[1] the discoverer of cocaine, the alkaloid when in combination as an auric salt, and when heated in a tube decomposes, with the evolution of a dense sublimate of benzoic acid. The auric salt produced by the addition of auric chloride to the so-called stenocarpine solution, when dried and heated in a glass tube, gave off copious vapors of benzoic acid, which latter was deposited in partly crystalline form on the cooler portions of the tube. This sublimate, when dissolved in water to which a couple of drops of ammonium hydrate had been added, and evaporated at a low temperature until all free ammonia had been driven off, gave a decided flesh colored precipitate of ferric benzoate upon the addition of ferric chloride.

Wöhler and Lossen[2] found upon heating cocaine several hours in a sealed glass tube with concentrated hydrochloric acid, that the cocaine split up into benzoic acid and ecgonine. On treating the stenocarpine in a sealed tube with strong hydrochloric acid, and extracting with ether and evaporating the latter to dryness, a residue was obtained, which, when dissolved in water containing a few drops of ammonium hydrate, and the excess of free ammonia driven off, gave, on adding ferric chloride, the characteristic precipitate of ferric benzoate.

From these tests we may conclude that the solution contained cocaine.

In order to decide whether an alkaloid was present belonging to the atropine group, the following tests were performed: A drop of the solution was evaporated to dryness at a gentle heat, and Vitali's test applied to the dry residue, but there was no response. The solution was now rendered slightly alkaline by the addition of sodium hydrate and the alkaloids thereby precipitated. The solution was now shaken with ether, which extracted the alkaloids in their free state; the ethereal solution was allowed to evaporate spontaneously and Vitali's test applied to small portions of the dry residue with marked success, the blue color produced by the one or more alkaloids of the mydriatic group with this test was quite distinct.

To determine the presence of chloride and sulphate, as cocaine and atropia are generally employed in this form, a portion of the solution was evaporated to dryness with a few drops of sodium hydrate solution and some crystals of potassium nitrate, and incinerated over a naked flame. The residue was now dissolved in water, acidulated with HNO_3 and boiled, to drive off the nitrous acid. A portion was now tested for chlorine with $AgNO_3$ and a curdy precipitate of silver chloride was formed. To still another portion barium chloride was added, and a cloudiness was produced, showing the presence of a sulphate.

Notwithstanding the fact that the solution was marked 2 per cent., it was found to contain 7.34 parts of solid residue. We may, therefore, safely conclude that this so-called new anæsthetic is but a joining of old remedies in a new dress, namely, a mixture of cocaine and atropine, or another of the mydriatic group, and that it is nothing more than a scheme for the obtaining of money without proper return. As it has been sold to physicians for the high price of $1.25 per drachm of a 2 per cent. solution (?), it seems but right that its falsity be exposed.

UNIVERSITY OF PENNSYLVANIA, CHEMICAL LABORATORY,
October 26, 1887.

[1] Inaug. Diss., über eine neue Base in der Coca-Blättern, Gottingen, 1860.

[2] Ann. Pharm., 121, 372.

MEDICAL PROGRESS.

The "Alternative," Non quarantine System of England.—England, one of the foremost nations in hygiene, has rejected the quarantine system; and the "alternative" method now in use is thus described by Dr. Thorne, in the *Practitioner* for October, 1887:

Having deliberately abandoned the system of quarantine, we began, many years ago, to organize the system of medical inspection with isolation. The medical inspection comes first into operation on our coasts. The Customs officers board the vessels coming into our ports, and they at once communicate to the sanitary authority the occurrence of any case of cholera, choleraic diarrhœa, or suspected cholera. A vessel so affected is detained until the medical officer of health has examined every member of the crew and passengers. Those actually sick of cholera or choleraic diarrhœa are at once removed to the port sanitary hospital, and any person certified to be suffering from any illness which that officer suspects may prove to be the cholera is detained for a true period of observation not exceeding two days. The medical inspection is thus followed by isolation of the sick. Unlike a quarantine system, this process does not interfere with the healthy, or expose them to risk by herding them together with the sick, but the names of the healthy, and the places of their destination are taken down, and the medical officers of health of the districts in question are informed of the impending arrivals. This part of our system has been named our first line of defence, but it would be of little value if we stopped there. Our main trust is in the promotion of such local sanitary administration in every part of the country as shall rid us of the conditions under which alone cholera can spread. In periods of emergency, as during the past three years, a special medical survey of such districts as are most exposed to risk is organized under the supervision of the medical officer of the Local Government Board, and where needed the sanitary authorities are urged to action. Important as have been the results of the recent survey, they would go for little were it not for the steadily maintained work of sanitary authorities and their officers throughout the kingdom; and we who have been taunted abroad for opposing quarantine because its restrictions touched our commercial interests and our pockets, may justly feel proud that in England and Wales alone the people have, during the past ten years, of their own accord, and apart from Government dictation, spent by way of loan or in current expenditure, over eighty millions sterling, for purposes mainly of a sanitary character. And we may fairly ask whether any corresponding expenditure has in other countries given evidence of real faith in a quarantine system.

The truth is that this kingdom still takes the lead as a progressive Power in the matter of public health. The cost incurred has been immense, but it has not been in vain or unremunerative. Our cholera death-rate, which was 30 per 10,000 in 1849, fell to 11 in 1854, and again to 7 in 1866. Since then we have labored hard to prevent the disease from securing a footing amongst us; and though our labors are far from complete, and the disease has on several occasions been imported, yet it has each time been at once checked. "Our "fever" death-rate, falling with the advance of sanitation, is now less than one-third of what it was before 1866; and our general death-rate has during the same period been reduced from about 22 to 19 per 1000.

On Cholera.—At the Vienna Congress of Hygiene Professor Pettenkofer expressed himself as follows: He was decidedly of opinion that the bacteria alone are by no means sufficient for the spread of the infection, just in the same way as the leaven alone is not sufficient for the making of beer. He was far from believing that all symptoms of infection could be explained by the presence of the bacteria alone; for him, only the x had been found, but not yet the y and the z of the equation. In the first place, the first question that had to be answered was as to the behavior of cholera in its epidemic home, India; whether it derives its origin from patients affected with cholera or from localities which are infected with the disease. It must be taken into consideration that, though the Pendschal is traversed by railways, and though there is a good deal of traffic in that region, some districts in it have remained free from cholera. This proved that the condition of the locality has a predominant influence in the spread of this epidemic. The influence of the season is also very striking. In India the period of maximum intensity of cholera in Lahore is said to be the month of August, and the minimum in the month of April; whereas in Calcutta the opposite is the rule. It would, therefore, be extraordinary if the cholera outside India is absolutely independent of local and seasonal conditions. The statistics of mortality in cholera cases in Germany for twelve years (1848–1859) are as follows: Prussia, 20; Posen, 0.5; District of Leipzig, 16; District of Dresden, 3; Upper Bavaria, 26; Upper Palatinate, 0.3 out of 10,000; and yet the comma-bacillus had come into all these districts. It is also characteristic that with us the cholera disappears completely for a longer or shorter interval of time, and must again be imported from India, which is not the case with other diseases, such as smallpox, syphilis, and other affections, which were equally imported from the East. It is evident from this that the human organism *by itself* does not present a favorable soil for the development of this infecting microörganism. The influence of the season was also shown in a striking way during the abovementioned invasion of cholera in Germany. Out of 167,000 persons who succumbed to the cholera in Prussia from September till April, 1866, 50 000 died in the month of April, and 30,000 in the month of September. In Genoa, where the disease had up to the present prevailed nine times, the cholera period always lasted from July till November, when no case of cholera was observed during the rest of the year. He (the speaker) did not wish to oppose the bacteriological theory, but was also anxious to insist that this narrow speculative horizon should be abandoned, and the conditions of locations and seasons should be attentively studied, as the immunity of certain places cannot be at all explained without these conditions being taken into account. These considerations also include the condition of drinking water. In conclusion, he alluded to England, which, since the opening of the Suez Canal, in spite of the numerous importations from India, was

nevertheless free from cholera, owing to the preventive system which had been carried on in that country.—*British Medical Journal*, Oct. 8, 1887.

COUMARIN, WITH IODOFORM.—LANGLEBERT, of Paris, has employed coumarin, a derivative of tonka bean, to disguise iodoform, in the following formulæ:

Iodoform. pulv.	gr. ¾.
Coumarin.	gr. ½.

For 1 pill.

For a solution.

Iodoform.	gr. 15.
Coumarin.	gr. 5.
Alcohol	q. s.

For local use.

In powder.

Iodoform.	gr. 15.
Coumarin.	gr. 3.
Lycopodii	gr. 3.

In liquid vaseline, the following solution may be made:

Iodoform.	gr. 15.
Coumarin.	gr. 3.
Vaselin. liquid.	℥ 5.

—*Gazette de Gynécologie*, September 15, 1887.

THE ADMINISTRATION OF CHLOROFORM.—ROBERTSON advises the following precautions in the *Glasgow Medical Journal* for October, 1887:

1. I never give chloroform at an earlier period than four hours after easily digestible food has been taken.

2. Always examine the patient's heart immediately before giving it.

3. Ascertain by personal examination that every article of clothing about the chest or waist is quite loose.

4. Bare the neck and chest so that both pulsation and respiration may be easily seen.

5. Never give chloroform in other than the recumbent position.

6. Always have at hand a pair of tongue forceps, and a hypodermatic syringe containing 10 or 15 ℳ ether; or, failing the latter, some amyl nitrite.

7. Always have a third person present.

8. Before holding the towel or inhaler over the mouth and nostrils, it is well to ask the patient to close the eyes, and to count slowly and audibly during the inhalation of the drug. It is also well to know the person's Christian name beforehand.

9. Never bring an inhaler or towel saturated with the anæsthetic suddenly down over the patient's face.

10. Always allow a sufficiency of air to gain access to the mouth and nostrils.

11. Watch most carefully the respiratory movements, and note the cardiac action by an occasional peep at the lips. Should the former become impeded or irregular, or if, when anæsthesia is well advanced, the patient should have greatly protracted expirations accompanied by groaning, stop the chloroform, raise the chin, and by forcibly opening the mouth, bring forward the tongue. This, in my experience, has never failed to promote regular respiration, after which anæsthesia may be carried on.

Should the heart's action fail, as is always manifested by a sudden blanching of the lips, stop the chloroform; lower the head; inject hypodermatically the ether at hand, and begin artificial respiration. A few drops of amyl nitrite applied to the nostrils will be found useful.

In the event of these means failing, I would endeavor to restore animation by *rhythmical compression of the heart*, combined with artificial respiration. The rhythmical compression has been frequently successful in restoring animals poisoned with chloroform; and, although I know of no case where it has been tried on man, I certainly would adopt it should the necessity ever arise. The compression of the heart causes a slight movement of the blood, and also acts as a rhythmical cardiac stimulus.

Bohm asserts that he has restored animation by this means in the case of cats after the heart's action had been arrested by chloroform for as long as forty minutes.

12. The chloroformist should on no account allow his attention to wander from his duties; nor should he ever allow himself to be drawn into conversation by any looker-on. The safety of the patient demands his whole and sustained attention.

13. Watch carefully from time to time the condition of the pupil: if the anæsthesia be profound, and the pupil have been contracted to almost a pin point, and then begins to dilate—the chloroform still being given, and the breathing diaphragmatic—at once stop the drug, and do not continue it until respiration is again quite normal, and the pupil again begins to contract. During the early stage of anæsthesia the centre for dilatation of the pupil (viz., cervical-sympathetic and trigeminus) is stimulated, so that the pupil dilates. With complete narcosis this centre is partially paralyzed, so that the pupil no longer dilates. With more profound anæsthesia, this centre becomes completely paralyzed, and the oculo-motor or third nerve comes into play, by which the pupil may be contracted to the size of a pin's head provided that the paralysis of the centre for dilatation be maintained by the drug being pushed. After a time the oculo-motor, or centre for contraction, becomes in turn paralyzed, and rapid and complete dilatation takes place. It is at this stage that death rapidly ensues, unless means be taken to prevent it. Syncope occurs—caused by reflex stimulation of the cardio-inhibitory centre of the vagus, through the connection between the vagus and sympathetic in the cardiac ganglia.

A SIMPLE INTESTINAL TONIC.—DE SINÉTY is credited with the following combination, by *L'Union Médicale* of October 13, 1887:

R.—Rhei pulv.	5 parts.
Natrii bicarbon.	
Quinquinæ pulv. . . .	ää 10 "

Used to advantage in dyspepsias, especially those complicating uterine disease.

PREPARATIONS OF MEAT FOR INVALIDS.—DUJARDIN-BEAUMETZ has used meat prepared after the following formulæ to advantage in prescribing meat diet:

Filet of beef	60 parts.
Marine salt	1 part.
Jelly (any fruit the patient may desire)	500 parts.

Also

Uncooked meat	50 parts.
Sweet almonds	15 "
Bitter almonds	1 part.
White sugar	16 parts.

To be pounded together in a mortar or on marble, and then an emulsion to be made with water.

Also

Uncooked meat, grated	100 parts.
Pulverized sugar	40 "
Wine (sherry, port, etc.)	20 "
Tincture of cinnamon	3 "

The only counter-indication to the use of these preparations is the danger of the eggs of tænia.

Meat may be dried at 100° C. (212° F.) and powdered. Microscopic examination of such meat should be made, however, and if bacteria are present in great numbers, the specimen should be discarded.

The powder may be incorporated with the food in various ways, in soups, chocolates, mixtures with beans and peas.—*Les Nouveaux Remèdes*, October 8, 1887.

The Results of Laceration of the Cervix Uteri.—Noeggerath, of Wiesbaden, has studied 100 cases of laceration of the cervix uteri occurring in his practice, and finds the following conclusions warranted from these cases.

Women having uterine diseases conceive more easily if the cervix be lacerated than if it be intact; they abort less easily in the first condition than in the second.

The position of the uterus is not influenced by laceration of the cervix.

The axis of the uterus is not lengthened by cervical laceration.

Erosions and ulcerations are equally frequent in lacerated and intact cervices, and disease of the connective tissue of the cervix is no more frequent in lacerated than in uninjured cervices.

Lacerations of the cervix have no influence on the development of uterine diseases, either in frequency or intensity.

Eversion of the lips of the cervix is never the direct result of lacerated cervix.

Noeggerath believes that a laceration of the cervix is only of importance when recent, when it opens a door for the entrance of infectious organisms into the blood.

The influence of scar tissue on the nerves of the uterus the writer considers great; but the restoration of uterine form he considers without influence on the condition of the organ.—*Berliner klinische Wochenschrift*, October 8, 1887.

Oil of Wintergreen in Therapeutics.—In collecting evidence regarding the value of this substance, Dr. Squibb found that every physician who had used it frequently, had found cases in which it was either powerless, or was not well borne by the stomach, and some of these cases were afterward benefited by sodium salicylate or salicylic acid. But all the testimony elicited was favorable to the use of the oil, and this especially in the large class of cases wherein the attacks were not severe. In all such it seemed to have important advantages over the sodium salicylate. In severe cases wherein the pain was very severe and the elevation of temperature great, the conditions were controlled more promptly and more effectually by the sodium salt.

There was no dissent from the general conclusion reached that the oil, whether natural or artificial, or whether from wintergreen or birch, was an important agent for obtaining the best results of salicylates in a very large class of cases.—*Ephemeris*, October, 1887.

For Pityriasis Versicolor.—Ihle employs resorcin in the following combination:

Resorcin	gr. 75 to ʒ 2½.
Ol. ricini	ʒ 11¼.
Alcohol	ʒ 37½.
Balsam. Peruv.	♏ 8.

—*L'Union Médicale*, October 1, 1887.

Diagnosis of Defective Sight in Infants.—Nettleship, in a clinical lecture printed in the *London Ophthalmic Hospital Reports*, Vol. xi., Part iv., speaks as follows on this point: "It will be self-evident that no exact tests of vision can be applied, and that an infant's sight may easily seem worse than it is. The chief things to notice are whether the child turns its eyes toward the window, or follows the flash of the mirror in the dark room (or, what comes to the same thing, turns its head away or blinks its lids under the same tests), the presence or absence of nystagmus and the state of the pupils. No doubt all babies do not learn to notice—*i. e.*, follow and look at objects, at the same age—I believe that they usually look at a bright light thrown steadily into the eyes a day or so after birth, but that from three to six weeks' education is necessary to enable them to follow a moving object in such a way as to give the appearance of intelligence or "noticing"—and it is failure to "notice" that raises the mother's apprehension, especially if she has had other children whose behavior was different. If the infant's eyes oscillate rhythmically, or even wander constantly though irregularly, its sight is almost certainly bad, for we know very little of primary nystagmus from nervous disease in infants. The pupils are less useful in babies than in adults, because the movements of the infant's eyes at once embarrass observation, and lead to associated movements of the pupils independently of alterations in light, and because the natural range of pupillary action in infants seems to be less than it is when the eye has attained full development. Though I need hardly add that in infants as in adults serious loss of acuteness of vision is compatible with fairly active pupils, I think it is less generally known that, in children at any rate, the light reflex may be present even though the child be absolutely unconscious of light, a condition of which I shall be able to give several instances further on. In examining the pupils of a baby, avoid touching the face or head, and so provoking movements of his head or eyelids."

The Treatment of Whooping-cough by Boric Acid.—Dr. Halloway, of London, has obtained excellent results with the following treatment of whooping-cough:

I confine the patient to one room for a week or ten days, and I instruct that each nostril be insufflated

every three hours during the day, and once during the night, with from two to three grains of finely powdered boric acid. I make no difference in the diet, unless there is some special circumstance which calls for it. At the end of ten days I allow the child to go out in favorable weather. My chief trouble at first was with the nurse-tender. An ordinary insufflator of small size acted fairly well for a day or two, and then became inefficient from the powder fouling the valve, and finding its way into the ball, at the same time it was much too costly to come into general use among the poorer patients.

In this case I invented the tube of glass, and is made so that in case of breakage a child might fix in another. The two bends are to do away with the necessity for a valve. The powder is put in the hole in the horizontal position, and lying in this position cannot easily be shaken down into the ball. The end of the sliding arrangement is to cover the aperture, the forefinger of the left hand is simply placed over it, the ball being pressed at the same time with the right. The aperture of the nozzle is not made very small, so that the powder is scattered over the whole surface of the nasal mucous membrane.—*British Medical Journal*, October 15, 1887.

For instance:

R.—Acid. carbolic. pur. . . gr. xx.
Menth. hydrochlorat. . . . gr. iss.
Acid. boric. . . . . 3 i.
Vaselini . . . . . 3 iss.

—*Revue de chirurgie et d'orthopédie*, October 10, 1887.

The Value of Roasted Coffee as an Antiseptic.—Heine has experimented with infusions of roasted coffee upon bacterial cultures, and reports the following: He found that under conditions favorable for the development of the spheroidal cells of cholera the growth of bacteria was hindered, in some instances checked, in some cases they were destroyed. Ten per cent. solution of strong infusion, five per cent. coffee gelatine, and five-tenths per cent. solution were fatal, the latter was inert. In an emergency freshly roasted and ground coffee, in powder and infusion, may be used to advantage upon superficial wounds.—*Wiener medicinische Wochenschrift*, No. 17, 1887.

The Report of the Committee Appointed by the Edinburgh Medico-chirurgical Society to Investigate the Bacillus of Scarlatina.—This Committee conclude their investigations as follows: 1. That they find that an organism resembling that described by Mr. Eddington as bacillus scarlatinæ is, in a certain proportion of cases, present in the blood taken with due precautions from scarlatinal patients. 2. that they believe that the streptococcus scarlatinæ of Klein is identical with the organisms found by Eddington; 3. that they have as yet failed to corroborate the conclusions arrived at by Mr. Eddington as to the pathogenetic value of the bacillus scarlatinæ. The Committee ask to be allowed to continue the function of the Society to continue the investigation, particularly as to (a) the morphology of the several organisms, (b) the susceptibility of various animals to infection with scarlatinal blood and with the various organisms, their investigations so far having led them to doubt whether calves are susceptible to the action of human scarlatinal poison.

Dr. Roswell Park, of Buffalo, is pursuing investigations with cultures of this bacillus; his cultures have been examined by Dr. Eddington, who could detect no points of difference between the microörganism isolated by Dr. Park from the blood of a scarlatinal patient and that which he had found.—*British Medical Journal*, October 15, 1887.

The Nutritive Value of Kreatin, Kreatinin, and their Allies.—Dr. Mays, in an article in the *Practitioner* for October, 1887, concludes as follows from his experiments with meat extracts containing these substances:

From these results it is evident that there is quite a marked difference between the action of kreatin and kreatinin and the other agents which were examined; that the action of the two former is similar to that of blood, milk, etc., in sustaining the heart's action, and hence can no longer be regarded as devoid of nutritive properties. It may be true that they are the products of a destructive metamorphosis which begins with the albuminous foods and tissues and ends in the urea, but then these experiments show, too, that their influence as nutritive agents compares favorably with that of a two per cent. blood solution, as will be observed on the tracings. Indeed, I repeatedly found that after working for many hours with a frog's heart, and after it became so thoroughly exhausted as to refuse to respond any longer to the stimulant action of blood, the transfusion of kreatin or of kreatinin, in the proportion of one part to one or two thousand parts of saline solution, would at once spur it on to renewed contractions which were continued for some time longer; thus showing that their power for calling forth cardiac pulsations exceeded that of the blood to a great degree.

In view of the fact that asparagin, theine, and caffeine bear a very close chemical relation to kreatin and kreatinin, to which they are also supposed to be similar in action, it was deemed important to test their influence on the frog's heart; but in no instance were they shown to be capable of reviving the heart's contractions, and hence they must differ in their physiological properties from the two latter agents. In conclusion I will call attention to the striking analogy between the tracings obtained from kreatin and kreatinin, and to those which were obtained from the beef extracts shown in my previous article, which suggests the probability that the stimulating and nutritive virtues which these preparations contain chiefly reside in these two extractives.

Chronic Lichen Simplex.—May be treated to advantage by

Glycerole of starch . . .	30 parts.
Pulverized tartaric acid . .	1 part.

In chronic lichen about the genitalia a mixture of

Glycerole of starch . . .	30 parts.
Oil of cade	5 "

is useful; the proportion of the latter ingredient may be raised to equal parts by gradual increase, with advantage.—*L'Union Médicale*, October 6, 1887.

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SATURDAY, OCTOBER 29, 1887.

CHOREA AND HEART DISEASE.

IT has long been recognized by clinicians that serious valvular disease might have its origin in an attack of chorea, but the general impression has been that the cardiac mischief was rather the result of the rheumatism which so often accompanies the choreic outbreak. The subject has been investigated anew by OSLER, who has given the results of his observations in *The American Journal of the Medical Sciences* for October, 1887. The questions considered are the condition during the attack and the state of the heart some years subsequent.

A very common symptom of chorea is a systolic murmur, usually in the mitral region, the cause of which has given rise to considerable controversy. Osler regards it as evidence of endocarditis, relying on the extraordinary frequency, almost constancy, indeed, with which this lesion is found post-mortem; on the character and location of the murmurs, which are those which experience has shown are usually associated with inflammation of the mitral segments; and lastly, on the record which he is able to give of the subsequent heart history of 110 patients. This forms the most valuable part of the paper, as it represents, for the first time, the results of the examination of a large number of choreics at periods long after the attack. No cases were examined in which the chorea had come on after March, 1885. Of the 110 cases, in 43 the heart was normal, in 54 there were signs of organic disease, and in 13 there was functional disturbance. The very large proportion of those with heart disease may be in part due to the fact that such individuals would be more likely to return when requested, having had intimations of heart trouble, but it is stated that in only 22 was there palpitation or pain. Even with this allowance the number is very large, and shows that chorea plays a more important rôle in the causation of valvular disease than we had supposed.

The influence of rheumatism is indicated by the fact that 40.7 per cent. of the 54 cases had had articular trouble, but the large balance of 59.3 per cent. shows that this is not the sole factor in producing the endocarditis. No attempt is made to discuss the pathology of chorea in the light of the heart lesions. We infer that the author regards the endocarditis, in the majority of cases, as of choreic, not of rheumatic origin, and he urges greater care in the management of those patients in whom a mitral murmur develops during the course of the disease.

GASTROTOMY FOR FOREIGN BODIES IN THE ŒSOPHAGUS.

UP to a very recent period the view was held that when a foreign body was impacted in the œsophagus, and could be neither extracted by the mouth nor pushed into the stomach, it should be removed by cutting into the canal, provided it was not seated very low down or near the cardia. In the latter event the case was left to nature, with the hope that in the near future it might be vomited up, or find its way into the stomach and be passed by the rectum. Remarkable instances of these occurrences have been recorded as early as three months and as late as thirty-two months, the arrested substance, in the interval, giving rise to very little inconvenience. Such a fortunate issue should not, however, be anticipated, since, whether seated high up or low down, the foreign body is likely to set up inflammatory mischief which may result in death.

When the intruder is arrested near the entrance of the œsophagus into the stomach, particularly if it be angular or irregular in shape, though of only moderate volume, we may be permitted to express the belief that the axiom formulated by Arnott in regard to a foreign body seated high up, namely, that the rule of practice ought to be removal by incision, although no urgent symptoms may be present, when it has resisted a fair trial for its extraction or displacement, is correct. Whether the future will verify the wisdom of this statement remains to be seen; but that the foreign body should be extracted through a gastric incision when it gives rise to much suffering, along with progressive emaciation and loss of strength from difficulty in swallowing nourishment, or when it effectually prevents the passage of food into the stomach, is an assertion, the truth of which the reflecting surgeon can scarcely deny, especially as it has been successfully confirmed in two cases.

In the first of these cases, recorded by RICHARDSON in the *Boston Medical and Surgical Journal* of

December 16, 1886, a denture of four teeth, which had lodged near the cardiac end of the œsophagus, and had, in eleven months, greatly reduced the man's weight, maintained continuous pain in the epigastrium, and scarcely permitted him to swallow enough liquid food to keep him alive, was extracted by an incision through the abdominal wall and the stomach, which admitted the hand and half of the forearm. At the end of four months, the man was enjoying excellent health, and had gained fifty-four pounds. In the second case, reported by BULL in THE MEDICAL NEWS of last week, a peach-stone so completely blocked the canal at the distance of thirteen inches from the incisor teeth that alimentation by the stomach was rendered impossible. All efforts to dislodge the body having proved fruitless, it was extracted by gastrotomy, and the child made a rapid recovery.

The operation, as performed by Bull, the steps of which are fully described, will commend itself to the practical surgeon, particularly as gastrotomy for foreign bodies in the stomach is a procedure which has heretofore been attended with comparatively little risk.

TETANUS IN PREGNANCY.

THERE is no more characteristic phenomenon of the pregnant state than exalted nervous susceptibility: and analogy would lead us to expect that tetanus would be frequently met with among the many nervous disorders of this condition. Such, however, is not the case; an English writer has reported a considerable number of cases in India, under conditions peculiarly favorable, but Sir James Simpson had been able to collect but 28 cases, and MEINERT, of Dresden, has found but 9 cases in the literature of the subject, to which he adds, in the *Archiv für Gynækologie*, Band 30, Heft 3, a case recently treated by himself.

His patient was a robust washerwoman, aged forty. The predisposing cause appeared to be residence in damp, ill-lighted rooms. Her first and second pregnancies, however, were normal; in the second month of the third pregnancy tetanus, mild in degree, but typical in its symptoms, appeared, and resisted treatment, recovery following the birth of the child. The fourth and fifth pregnancies were normal, but in the fourth month of the sixth pregnancy tetanus was ushered in by a sensation of heaviness in the extremities, which often occurred suddenly during sleep, or when entering a warm room. Painful, tonic spasms of the fingers; painful sensations pervading the upper extremities; twitching in the eyelids; irregularity in respiration and speech; and violent movements of the arms, which often inflicted blows upon the patient's body, were the phenomena characterizing an attack. The paroxysms occurred daily, lasting several hours, and often returning several times in twenty-four hours. In the interval between the attacks her condition was normal.

The medication which Meinert employed was 30 grains of potassium bromide three times daily, and 2½ drachms of chloral hydrate in 6 ounces of water, a teaspoonful every ten minutes until the paroxysm remitted. Three days after the commencement of treatment a tænia was expelled, its variety was not ascertained. The paroxysms continued, but under the medication employed gradually diminished in severity.

After the birth of a healthy child at term, tetanic contractions of the hands and feeble spasms of the facial muscles persisted for several days. The child was attacked, eight days after birth, by convulsions which yielded to chloral, but in which it died, during a relapse.

Analysis of Meinert's collection of cases, eliminating those of doubtful character, shows that the disease occurs most often in women more than thirty years old. This corresponds with Gower's analysis of 142 cases of tetanus in women, from various causes, where the average age is between thirty and forty. In males the average age is between ten and twenty. The attacks occurred before the sixth month of pregnancy. All ended in recovery, although of Sir James Simpson's cases but five recovered. In four cases the cure was spontaneous, and followed parturition.

The cases collected show no complication or sequelæ, and the writer's case is peculiar in the occurrence of trophic disturbances of the nails of the feet and hands, and the formation of double cataract. The possible influence of an intestinal parasite in Meinert's case is freely recognized, but the sequelæ and the death of the child make a more profound affection of the nervous system than that usually produced by tænia probable.

Bleeding has been practised in these cases in treatment, but Meinert saw no reason to exceed the sedatives which he employed.

Eclampsia of renal origin at once suggests itself as the condition most nearly allied to the case described. The writer, however, has evidently differentiated his case to his own satisfaction from this affection, although he does not mention the clinical tests employed. As an example of one of the most serious disturbances of the nervous system to which the pregnant woman is liable, Meinert's case is highly interesting and instructive.

IS ERGOT A PROPER DRUG TO COMBINE WITH DIGITALIS?

IN the *Berliner klin. Wochenschrift*, No. 34, is an article by ROSENBACH on the combined use of these

two drugs, in which he recommends their administration particularly in aortic insufficiency, in idiopathic dilatation of the heart, with alterations in the elasticity and contractility of the bloodvessels, and in asthma.

Notwithstanding the fact that he reports favorable results from such practice, we doubt very much whether the ergot, at least in the first disease mentioned, did as much good as it did harm, since its physiological action, when considered with the physiology of the circulation, really contraindicates its use. The reader will recall that the ventricular systole in driving out the blood into the systemic circulation produces a sudden increase in the arterial distention over and above the blood current, and that having done this, it no longer acts directly in causing the onward flow of the blood, but is in a manner supplemented by the aortic valves. The blood is now between several opposing forces, for the vital contractility of the arterial wall presses on it and its onward flow is resisted by the muscular arterioles. If the aortic valve is perfect, however, and no regurgitation can take place, the blood, unable to go backward and compressed laterally, chooses the path of least resistance, viz., through the arterioles. It is, therefore, seen that the aortic valve influences very greatly the onward flow of the blood stream, and that in direct proportion to its lack of integrity and the resistance offered by the arterioles is the leakage back into the ventricle. It at once becomes evident that the administration of ergot in contracting these arterioles in a case of aortic insufficiency must induce an increased regurgitation.

Again, we have always held the opinion, and we think that most therapeutists will agree with us, that aortic insufficiency is of all the valvular lesions of the heart the very one which rather contraindicates the use of digitalis, in that it not only prolongs diastole, but likewise increases the ventricular capacity, thereby permitting a greater opportunity for regurgitation into the ventricle.

A meeting of the Executive Committee of the Congress of American Physicians and Surgeons, for the purpose of organization, was held on October 5th in the Hall of the College of Physicians of Philadelphia. The special societies were represented as follows:

American Surgical Association, Dr. Claudius H. Mastin, of Alabama.

American Otological Association, Dr. Cornelius R. Agnew, of New York.

American Ophthalmological Association, Dr. D. B. St. John Roosa, of New York.

American Laryngological Association, Dr. J. Solis Cohen, of Pennsylvania.

American Neurological Association, Dr. L. Carter Gray, of New York.

American Dermatological Association, Dr. I. E. Atkinson, of Maryland.

American Climatological Association, Dr. A. L. Loomis, of New York.

Association of Genito-Urinary Surgeons, Dr. John P. Bryson, of Missouri.

American Association of Physicians, Dr. William Pepper, of Pennsylvania.

The Committee was organized by the election of Dr. Pepper as Chairman, and Dr. Bryson as Secretary.

It was decided to hold the Congress of 1888 in Washington, D. C., on Tuesday, Wednesday, and Thursday, September 18th, 19th, and 20th, respectively. The sessions of the Congress will be held in the evenings, leaving the mornings and afternoons free for the sessions of the special societies participating.

The following officers of the Congress were elected:

President.—Jno. S. Billings, M.D., LL.D., U.S.A., of Washington, D. C.

Vice-Presidents.—The Presidents-elect of all the participating societies.

Treasurer.—Dr. W. H. Carmalt, of Connecticut.

The arrangement of the programme for the sessions of the Congress was referred to the President, the Secretary, and the Chairman of the Executive Committee.

The Michigan State Board of Health has received information from Dr. Sifton, Health Officer of Sutton's Bay township, which illustrates in a striking way the manner in which this country obtains contagious diseases from the old countries. October 2, 1887, a family arrived in Sutton's Bay, Keelanaw County, direct from Norway. The family came over in the steamship Ohio, of the Inman Line, reaching New York on September 30th. Scarlet fever was on board the steamer during the passage, one child dying before the landing, and "several more were sick in the same way." One child of this family was taken sick with scarlet fever the day after reaching New York. The family, however, proceeded over the New York Central, and the Lake Shore and Michigan Southern Railways, to Michigan; then over the Detroit, Grand Haven, and Milwaukee, and the Grand Rapids and Indiana Railways, to Traverse City, then to Sutton's Bay. Another child of the family has since come down with the disease. The family had a certificate, signed by the surgeon of the steamer, that they had been protected by vaccination against smallpox; so they passed the quarantine authorities at New York without detention, after they had been exposed to a contagious disease which

causes more deaths by far in this country than does smallpox.

The following new appointments have been made at the New York Post Graduate Medical School and Hospital:

Dr. Robert Abbe, professor of clinical surgery.

Dr. Henry D. Chapin, professor of diseases of children.

Dr. J. U. Girdner, instructor in clinical surgery.

Dr. A. M. Phelps, professor of orthopedic surgery.

The new buildings of the New York Skin and Cancer Hospital, at the Country Branch, Fordham Heights, will be formally opened to-day, at two o'clock. W. Q. Riddle, Esq., President of the Hospital, will give an address of welcome, and Dr. A. Jacobi, President of the Medical Board, will give an address on Cottage Hospitals. The Country Branch Hospital is situated at Fordham Heights, New York City, about one mile above High Bridge, between Sedgwick Avenue and the old McComb's Dam Road.

The New Jersey Sanitary Association holds its thirteenth annual meeting at Trenton, on October 28th and 29th, under the presidency of Dr. W. K. Newton, of Paterson. The object of the Association is to bring together all who feel an interest in the investigation of facts and principles relating to public and personal hygiene, and who desire to diffuse among the people such information as will secure deliverance from avoidable causes of disease. The titles of a number of interesting papers are on the programme.

The Sixth International Congress of Hygiene was held in Vienna, in the early part of this month, and appears to have been a most interesting and successful gathering. The next Congress will be held in London, in 1891, and the following Committee of Organization was appointed: Dr. Brouardel, for France; Dr. Dobroslavine, for Russia; Dr. J. S. Billings, for America; Prof. F. de Gruber, for Austria; Dr. Roth, for Germany; Dr. Mosso, for Italy; and Prof. Corfield and Mr. Shirley Murphy, for England.

REVIEWS.

Transactions of the American Gynecological Association. Volume II., for the year 1886. 8vo. pp. 512. New York: D. Appleton & Co., 1887.

This Society now numbers fifteen Honorary and fifty-eight Active Fellows, the number of the latter being limited to one hundred. The recent meeting in New York, from the advantages of the place selected, and the fact that many invited gynecologists of Europe were present, was one of unusual interest, and will no doubt aid to increase the Fellowship of the Society in both orders. Prof. Alexander J. C. Skene, of Brooklyn, had the honor to preside.

Space will not admit of more than a mere notice of the volume under review. Dr. H. P. C. Wilson read a paper in which, after an extensive experience, he advocated the old and now generally condemned operation of division of the cervix backward in some forms of anteflexion of the uterus, with dysmenorrhœa and sterility. After performing the operation in 400 selected cases, he was prepared, from the results attained, to recommend it.

Dr. Ellwood Wilson, of Philadelphia, reported six cases of recent lacerations of the cervix uteri, cured by applications of the nitrate of silver in strong solution.

Prof. Fordyce Barker drew attention to the many remarkable coincidences on record, which have led to the belief that the fœtus in utero may be influenced by maternal impressions received later than the usual period for the perfection of embryonic form.

Dr. George J. Engelmann, of St. Louis, presents a treatise on "Electricity in Gynecology," of 148 pages, or more than a quarter of the volume. Three observers —Drs. John Byrne, Engelmann, and William H. Baker —collectively occupy more than one-half of the volume with the curative results of galvanic appliances in some of the diseases peculiar to women.

Dr. James R. Chadwick, of Boston, enters at some length into the value of the bluish color of the vaginal entrance as a sign of pregnancy, and shows the peculiar appearance by a colored plate.

Seven papers are given that were presented by applicants for election to active fellowship. These are very creditable to their authors, and some bear evidence of being the product of a large experience in gynecological practice. While the volume is in some of its papers one of much interest, it is, as a whole, less instructive and inviting than some of its predecessors. We hope to see a revival of interest from the work of incoming Fellows, some of whom are in their days of youth and activity.

Public Health. The Lomb Prize Essays. Award made at the Thirteenth Annual Meeting of the American Public Health Association, Washington, D. C., Dec. 10, 1885. With Appendix. Second edition. 8vo. pp. 198. Concord, N. H. 1886.

I. Healthy Homes and Food for the Working Classes. By Victor C. Vaughan, M.D., Ph.D., Professor in the University of Michigan.

II. The Sanitary Conditions and Necessities of School-houses and School-life. By D. F. Lincoln, M.D., Boston, Mass.

III. Disinfection and Individual Prophylaxis against Infectious Diseases. By George M. Sternberg, M.D., Major and Surgeon, U. S. Army.

IV. Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the best Means and Appliances for Preventing and Avoiding them. By George H. Ireland, Springfield, Mass.

Through the liberality of Mr. Henry Lomb, of Rochester, N. Y., the American Public Health Association

has been enabled to publish these admirable essays, which were selected as the best among many offered in competition for prizes. The present volume has been prepared in its handsome and durable style for public and private libraries, but a cheap edition in pamphlet form has also been issued for general circulation. The object of the publication is to diffuse useful information upon sanitary topics of universal interest as widely as possible, and as a basis for the success of this praiseworthy aim the papers have been written in a clear, attractive style by authors thoroughly familiar with their subjects and the wants of the public.

The selection and endorsement of these essays by the Association is a sufficient guarantee of their reliability and meritorious character, and careful examination does not fail to corroborate the good judgment displayed in making the awards. Though most of the essays are designed for the improvement of the environment of school children and the working classes, there is instruction for every one in the whole series of papers.

The book has a copious index, and is well printed on fine paper, and handsomely bound in a style uniform with the annual volumes of the Public Health Association. The essays are also prepared separately in pamphlet form, and are sold at cost, and most liberal inducements have been made for the widest distribution of the work. It is the desire of the Association that a copy may be placed in the hands of every family in the country, a wish which we sincerely hope may be most fully realized.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 12, 1887.

The President, J. Solis-Cohen, M.D., in the Chair.

Dr. Wharton Sinkler read a paper on

MIGRAINE IN CHILDHOOD.

Migraine, he said, is more common in children than is generally realized. Popularly, the attacks of "sick-headache" which many children have, are attributed to disorder of the stomach from some indiscretion in diet, and many physicians hold the same view.

The fact that migraine is a disease which is especially likely to begin about the period of puberty has long been recognized. Many children begin to suffer from characteristic attacks as early as seven or eight years of age, and continue to have them until adult life; or, indeed, the attacks may continue all through life. Still, it is most often the case that when migraine begins in early childhood, it becomes more severe at puberty, and ceases by the time full development is attained. The influence of heredity is seen to a marked degree in migraine. The children who suffer from migraine often belong to neurotic families, and it is common to find among the near relatives instances of other nervous disorders. Children who suffer from this disease at and before the time of puberty may, in later life, become the subjects of some of the grave neuroses, such as epilepsy or insanity. The great value of the early recognition and cure of the disease is, therefore, apparent.

In addition to the influence of heredity, there are many other causes which may induce migraine in children. Improper food, bad atmosphere, and, above all, an insufficient amount of sleep, with overtaxing of the brain, all tend to predispose to or directly bring on migraine. When a child first begins school he often complains of more or less headache. The close air of the school-room and too little exercise are enough to account for some of these headaches. In other children, mere mental effort brings on attacks of pain in the head. The same holds good of migraine observed in chorea, namely, that it is the studious, ambitious children, who stand at or near the head of their classes, who suffer from both of these affections. In many instances there are ocular defects, which cause eye-strain, and in those cases the attacks of migraine continue to become more and more frequent in proportion as the eyes are used, until the eye-defect is corrected by glasses. It is not in all cases, however, that the headaches which follow excessive use of the eyes are due to ocular defect. The following case, which Dr. G. de Schweinitz described to the writer, illustrates this fact:

Charles C., aged fifteen. A slender lad, who has grown rapidly; clear, fair skin; slightly anæmic. No noteworthy illnesses. Goes to school and studies hard. One year ago he began to have headaches, as follows: sudden hemiopia, followed by intense pain on left side of head, and marked numbness along the arm of the corresponding side, and terminating finally in nausea, and occasionally in sick stomach. Attacks varied in frequency and in severity. With the exception of the migraine, the anæmia, and an imperfect digestion, no unsoundness was discovered.

Examination of eyes: color of eyes blue: pupils normal and equal. Vision: R. E. $\frac{15}{XV}$; L. E. $\frac{15}{XV}$. Accommodation: R. E. 8.3 D.; L. E. 8.5 D. Muscular anomaly, slight insufficiency of interni; color perception normal; refraction error, hypermetropic astigmatism. *Ophthalmoscopic examination:* R. E., nerve of normal color; slight conus out and some retinal striation around disk; choroid disturbed; numerous lymph reflexes. L. E., similar disk; retina more striated, with veiling of lower edges of disk. Field of vision normal. The treatment was largely dietetic and hygienic. The medicines used were, after the correction of the dyspepsia, syrup of the hypophosphites, strychnia, and iron. The refractive error was not corrected. The headaches have practically ceased.

Migraine from eye-strain is not uncommon in children. Dr. de Schweinitz has kindly furnished me with the following case, which is also of interest on account of the superficial optic neuritis which exists:

W. C. W., aged seven. When two years old had "gastric fever," from some imprudence of diet. Has had whooping-cough and varicella. Since two years of age, has experienced great difficulty in digesting and assimilating food, often going for long periods without being able to take any solid food. One and a half years ago, or when he began to go to school, began to have dull frontal headaches. Occasionally has paroxysmal headaches, quite different in type, beginning with extreme pallor, violent head pain, confined to one-half of forehead, and followed by nausea, but no vomiting. There are no visual disturbances preceding these

attacks, but no aura of any kind. These headaches have been present since he was two years old. An unusually healthy looking boy; lives in the country. Examination of urine negative. The boy is unusually bright and quick at his lessons, but he has been pushed.

Examination of eyes: color of eyes blue; pupils normal and equal. Vision: R. E. $\frac{15}{XV}$, L. E. $\frac{15}{XV}$. Accommodation: R. E. 12 D., L. E. 12 D. Muscular anomaly: insufficiency of superior recti; color perception normal; refraction error, hypermetropia = 1 D. *Ophthalmoscopic examination*: R. E., disk an irregular ovoid, all edges hazy, those on nasal side hidden; surface of disk gray-white; lymph sheaths full; veins tortuous; L. E., optic ovoid; all edges, especially nasal, hazy; veins full and tortuous.

Diagnosis—Supernal neuritis and hypermetropia.

Migraine does not appear to affect one sex more than the other, but if any difference does exist the preponderance is on boys. Precocious sexual development in either sex often leads to this form of headache. It is very seldom that we meet with it in robust and hearty children, but is seen in those who do not get enough fresh air and who are thin and pale, or in children who think and read too much, and who do not romp and play, but prefer to sit with older people and drink in conversation far beyond their years.

The symptoms of migraine in young children are not far different from those in adults. The attacks are markedly paroxysmal, occurring from two to six weeks apart, and become more or less frequent, according as the conditions for their development are favorable or otherwise. There may be only one or two attacks a year. The attacks may be preceded by premonitory symptoms, such as chilliness, and a feeling of lassitude, and the child is dull, and indisposed to play. Sometimes there are subjective ocular symptoms in the form of specks floating before the eyes, muscæ volitantes, or balls of fire, and bright zig-zags. Occasionally the child complains of hemiopia. These symptoms last half an hour or more, and may be followed by subjective numbness of the tongue, lips, or of the entire half of the body. Putnam had a patient in whom in boyhood migraine was represented by repeated attacks of numbness and tingling of the right side of the face, and right half of the body, with aphasia, and hemianopsia, followed by little trifling headache, or none at all. Later in life there were severe attacks of pain. Usually as soon as the subjective auras disappear the pain begins. At first the pain is dull, and it may be confined to one side of the head; generally, in children, the pain is on both sides of the head, at least they complain of the pain as being general, and it may be either frontal or occipital; most frequently it is frontal. There is often nausea throughout the attack, or it may terminate in vomiting, or a free flow of urine, or sometimes there are two or three diarrhœic stools. After the crisis is reached the child may fall asleep, and after a nap waken well. The attack does not always terminate in a crisis; after a gradually increasing headache for several hours it gradually subsides. The face in the beginning of an attack may be pallid, and as the pain increases the face becomes deeply flushed, and the eyes suffused.

The treatment must be preventive and curative. If a child is of a neurotic family, insist on ten hours' sleep at night, and keep him from too prolonged application to his books. Encourage outdoor sports of all kinds, and, if possible, keep such a child in the country for many months in the year. The diet should be abundant and nutritious, milk, eggs, soups, and broths, with meat in moderation, and the various cereals, and plenty of vegetables and fruit. Such children can eat largely, and plenty of fatty articles of food are well borne and are of great advantage.

If a child has already begun to have attacks of migraine, nothing is of more value than attention to the general health. Such children are often pale and thin, and have but little appetite. If change of air can be secured, it is often enough to obtain relief from the attacks. If we cannot send the patient away, we must resort to tonics and good feeding. Cod-liver oil, if it can be borne by the stomach, is of the greatest possible use in such cases. If the child cannot take oil, we must introduce fat into the system in some other way. Cream and plenty of butter may be given.

Special anti-neuralgic drugs are seldom indicated in these cases, but sometimes the bromides may be given with great advantage, especially in those children who are of a very nervous temperament, and in whom any effort at brain-work causes headache. It should be given in small doses, and continuously for some weeks.

In many cases some ocular defect will be found which will require correction by glasses, and many cases of migraine in children have been cured by this means alone. In all cases of migraine we should look carefully into the condition of the teeth, and have any unsound ones filled or removed.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 20, 1887.

The President, A. Jacobi, M.D., in the Chair.

Dr. Clinton Wagner read a paper on

COLORADO SPRINGS AND DAVOS-PLATZ AS WINTER HEALTH RESORTS, COMPARED.

Having alluded to the change which had taken place in the minds of the profession in regard to the kind of climate most beneficial to patients suffering from phthisis, since a few years ago, when warmth and equability were considered the prime essentials, he said that Davos is half the year covered with snow, and that at Colorado Springs the difference between the temperature of the day and night is sometimes as much as 130° F. Yet both these places were once held in the highest esteem as health resorts for this class of cases. There is, in fact, no section of country in the world which combines warmth and equability with dryness. Dr. Denison, of Colorado, in one of his valuable papers, has said that variability is characteristic of dryness, and equability is found only with dampness. It was Dr. Herman Weber, he believed, who was the first to recommend high, dry altitudes for phthisis.

Dr. Wagner said that he could speak of both Colorado Springs and Davos from his own personal observations while residing at these resorts. Colorado Springs

is at an elevation of more than 6000 feet above the sea, and five miles to the north of it is Pike's Peak, over 14,000 feet in height. It has the dryness of an inland desert, the climate is exhilarating, the atmosphere more clear than that of Italy, and its scenery compares with that of Switzerland. From September to the latter part of April or first of May, there is no rain. There are no fogs or mists, and while rain occasionally falls, it rapidly disappears. The sun shines for 330 days in the year, and in the sun the temperature is warm, 90° to 130°. There are always at least 50 degrees between the temperature of the sun and shade.

If the atmosphere were not cold and dry, the heat of the sun would be intolerable. Sometimes at night the thermometer falls considerably below zero. One great advantage of Colorado Springs is that the invalid can be so constantly out of doors. The wind is the most disagreeable feature of the place, and this is worst in the months of November and March. On the whole, however, there is less wind than in the resorts of the Riviera. In pulmonary diseases the results are excellent, and cases with tuberculous cavities have been reported cured. Nervous and irritable patients, with a tendency to vascular excitation, should, however, never be sent to Colorado Springs, as the climate is too stimulating for individuals of this class.

From all that he could learn, this resort is not contra-indicated in laryngeal phthisis, provided the patients are improving in other respects. He had seen one case of this kind cured, and one other that was improved and on a fair way to recovery.

The hotels and boarding-houses are excellent, and good furnished houses, provided with all the modern conveniences, can be secured at reasonable rates. There are fine schools, churches, libraries, a theatre, and a club. The society is excellent, and there are plenty of horses which can be bought or hired cheap, so that riding and driving are conspicuous features of the life there. Moreover, the accessibility of the place is a great recommendation to Americans.

Davos is an Alpine Valley in Switzerland, 5300 feet above the level of the sea, and protected from the winds by neighboring high ranges. The climate in many respects resembles that of Colorado Springs, although the temperature in the shade averages lower—from zero to 25 below. The north wind is thoroughly exhilarating and bracing, but the south wind is enervating, damp, and disagreeable. When the snow melts the atmosphere is naturally full of humidity. The snow usually lasts from the latter part of October to the early part of April. The invalid's day is very short, lasting only from 10 A. M. to 3 P. M. So far as his observations went, very serious cases do not recover at Davos, and he thought it a resort better suited to patients with incipient phthisis and those who retain a certain amount of robustness. The air is entirely too cold to sit out of doors when there is no sun.

Dr. Wagner then proceeded to enumerate some of the points of difference between the two places and the advantages of the American over the Swiss resort. At Colorado Springs there is an average of twenty-eight good days in the month; at Davos, twenty. At Colorado Springs there are eight hours of sunshine in the day, at Davos four hours and a half. At Colorado Springs the invalid can indulge in riding, driving, tennis, picnics, etc., while at Davos the only out-door diversions are skating and tobogganing, and these are too violent exercises for many patients. At Colorado Springs the invalid can enjoy the comforts and advantages of home life, while at Davos he is compelled to stay in a hotel, and it is well known that hotels frequented by many phthisical patients always partake more or less of the nature of hospitals and are depressing in their influence. At Colorado Springs the patient can remain throughout the year; but at Davos he is obliged to leave in the early spring on account of the dampness from the melting snow. At Davos the hotels are excellent, and there is plenty of amusement. Formerly the drainage of the place had been very defective, but within the last few years a most efficient system of drainage, said to be the best in Europe, has been introduced. As much cannot be said for Colorado Springs, where there is no public system of drainage whatever, and cesspools and old-fashioned privies are still in use. He understood, however, that a complete system is now in contemplation, and, with the natural facilities of the place for good drainage, he had no doubt that it could be made very perfect.

On the whole, he would say that while Davos is, no doubt, the best high altitude health resort in Europe, the advantages of Colorado Springs are greatly superior in many respects. Moreover, there are at Manitou conditions very similar to those at Davos, although it is at an altitude more than a thousand feet greater, and the shortest days for the invalid are six hours in length. It is well sheltered from the winds, and possesses some excellent mineral springs. At present, however, it is comparatively deserted in the winter.

Dr. Alfred L. Loomis said that the climatic treatment of phthisis is constantly being regarded with more and more favor, and deservedly so. Eighteen years ago he read a paper before the American Medical Association, in which he took the ground that it was very wrong to send patients to warm climates, because a stimulating air was required in order to enable the patient to take out-door exercise. From his studies in connection with this subject since that time he had arrived at certain conclusions. In the first place, he did not believe that there is any locality which is *par excellence* the place for phthisical patients; but he recognized that two things are absolutely essential for a curative effect. The first is a pure atmosphere, an aseptic atmosphere, if we choose to call it so. Pure air can be taken into the lungs on the same principle that antiseptics are employed in external diseases and in surgical cases. He did not think it is possible to treat tuberculous cavities with antiseptic solutions, and doubted whether inhalations or other forms of applying antiseptic agents have any real effect in destroying bacilli. But if we can keep the lungs constantly bathed with an aseptic atmosphere, we are doing all that is in our power to arrest the disease. Under the beneficial influences of such an air the temperature is reduced and distressing nervous symptoms are relieved. This element, therefore, must be sought for in whatever locality is selected for the patient. Purity of atmosphere is naturally to be looked for in high altitudes, but the number of inhabitants, and various other circumstances, may contaminate it to a very

marked extent. He had no doubt that the air of Colorado Springs and Davos was originally aseptic, but since they had become crowded with hotels and consumptives he found that this is no longer the case, and he believed that the benefit of residing at these places will grow less and less until, finally, they will be altogether abandoned as health resorts.

The second essential for a curative effect is the presence of conditions which should be conducive to outdoor life. It is perfect folly, he thought, for a phthisical patient to go to any resort and spend twenty hours out of the twenty-four shut up in a hotel or boarding-house. It is much better to remain at home, and if the patient is not well enough to take outdoor exercise he is not well enough to be sent to these places. This is why those in the first stage of phthisis are so often relieved; and the reason that those with cavities live is because they go to the health resort in a condition rendering them able to live out of doors. It is, however, not necessary to go to Colorado to find a pure air, and, besides, he did not believe that high altitude of itself is of the slightest practical importance. The great essential is purity of atmosphere; but as it is desirable that the patient should spend the most of his hours in the sun, Colorado Springs is preferable to Davos. As regards recovery in those places, if the patient does not remain in them for two or three years after all trouble has disappeared, the disease is almost certain to reappear within a few months. This is the great objection to high altitudes for consumptives, and he thought it possible to secure a perfectly pure air at a lower altitude, and that, too, much nearer home.

DR. R. P. LINCOLN said that he agreed with Dr. Wagner in believing that Colorado Springs is superior to Davos, and chief among its advantages over the latter is the large amount of sunshine obtainable there. With the sun there is dryness; so that we should naturally look for the best results there. On the 1st of January there was sun for only four hours and fifty-seven minutes at Davos; while at Colorado Springs, at the same date, there was sun for over nine hours, or nearly twice as long. There was also much less moisture at Colorado Springs than at Davos. As to the advisability of sending a patient with laryngeal phthisis to high altitudes, there had of late been a considerable change in professional opinion, and Dr. Solly, of Colorado Springs, had told him that he had known three cases to recover at that resort.

DR. BEVERLY ROTINSON, being unable to be present, sent a letter in which he stated that he could not say as much of any health resort in this country or Europe as of Colorado Springs. A residence there, he thought, is of special benefit in the first stage of phthisis, and patients could there breathe the aseptic air which can only be secured at high altitudes, while the remarkable prevalence of sunshine enabled them to pursue the outdoor life which is so important a desideratum.

DR. KRETSCHMAR said that Dr. Wagner was mistaken in supposing that Dr. Herman Weber was the first to call attention to the efficacy of high altitudes in phthisis, as the first one to do this was Dr. Bremer, who did so in a work entitled *The Curability of Phthisis Pulmonalis*, which was published in 1852. He thought that Dr. Loomis was mistaken in supposing that the aseptic character of the atmosphere necessarily becomes diminished in such health resorts as those referred to, as statistics show that before the year 1853, when Dr. Bremer established his famous hospital at Gerberstoff, there was actually a greater proportion of deaths from phthisis in that place than there has been since, although more than 13,000 patients have been treated in it. It was also a fact that none of the Sisters, who acted as nurses, or other attendants in the institution had contracted the disease.

As regards Davos, Dr. Wagner was mistaken in his statement that there are no accommodations to be had except in hotels. There is no dust, which is an objection to Colorado Springs, and the snow unquestionably helps to preserve the aseptic condition of the atmosphere. In the spring, when the snow melts, the patients very properly leave. The most serious drawback that Davos has as a resort for consumptives is the admixture of pleasure-seekers and invalids, since the latter are tempted to indulge in habits that are injurious to them.

THE PRESIDENT said that while certain places have a considerable immunity from phthisis, this immunity is only relative. While it may exist among the agricultural population, this would not be the case among those engaged in indoor employments. One element claimed as an important one in the climatic treatment of phthisis had not been referred to this evening, and that was the necessity of ozone in the atmosphere. This is supposed to be due to the sunlight, and it is found among mountains and evergreen forests, as well as near the sea and on the sea. As to the immunity of the nurses and other attendants in Dr. Bremer's hospital, he understood that in this institution it was claimed that the air in the rooms was completely changed five times every hour.

DR. LOOMIS referred to the beneficial effect of antiseptic emanations, and said that many places which are not naturally aseptic are rendered so by those emanations, especially those from evergreen forests.

DR. WAGNER said that he saw no reason why a patient should not be taken to Colorado Springs, even if he was not able to take exercise. The journey could now be made with comfort in a comparatively few hours, and when he arrived there he could sit or ride out in the open air, which was not the case at Davos.

CORRESPONDENCE.

OCULISTS AND OPTICIANS.

To the Editor of THE MEDICAL NEWS,

SIR: I desire to bring to the notice of the profession an evil which, if not corrected, will do incalculable harm to many honest and striving gentlemen. I refer to the indiscriminate recommendations given by members of the highest standing to men-venders of various wares, not in the profession, and who, if they have received degrees, are practising their calling wholly without the pale of support by physicians.

A few days since there came to Charleston two scientific opticians from Chicago, whose business is to examine the eye, *correct errors of refraction, prescribe*, and sell glasses. As to the mere selling of glasses there is nothing to be said. All books on ophthalmology contain chapters most carefully written on errors of refrac-

tion, as produced by hypermetropia, myopia, and astigmatism, explaining the true nature of these deformities, and giving the minutest directions as to the correction and treatment. Further still, the authors of these works enumerate and dwell upon the ills that may be caused by the above conditions, but at no portion of their writings do they refer such cases to the *optician* who shall prescribe the proper glass. The optician is a most important and necessary person, but he fills a prescription for glasses as does a druggist for medicines.

These "scientific opticians" not only make and sell glasses, but examine the eye in order to prescribe the proper glass. They come recommended to do this work by many of the *best physicians* of the country and *members* of the *American Medical Association*. Upon their arrival in a new place they immediately call upon the most *eminent general practitioners*, produce the ponderous tome of recommendations containing the signatures of well-known physicians of other cities, of Governors, Senators, ministers of the gospel, and other important functionaries. At the same time they are very particular to impress upon the gentlemen that they are not oculists, do not treat *diseases* of the eye and, therefore, cannot interfere with the oculist in any way. The general practitioner is for the nonce somewhat staggered by the array of prominent names, all thoughts of the oculists' work is forgotten, and he cannot resist the urgent appeal for his autograph, nor can he remember afterward the exact object for which it has been extracted, while he has been dazed as it were by gas. His begets others, and finally the names seem to jump to the book without much persuasion. In like manner ministers of the gospel—they always call upon them too—append their names, though some of them have never worn a glass and would recognize no difference between them. (One minister signed because his physician's name appeared on the list. The physician's was withdrawn but the minister's is still there.) Do they call upon the oculist? No, they do not, though every general practitioner has advised their doing so, it would be more proper for the oculist to call upon them. They next proceed to put a very taking advertisement in the daily papers, to which are appended the names of the eminent physicians, divines, etc.

This game was partially repeated in Charleston, the names of physicians secured and all went as merrily as the marriage bell, but certain members of the County Medical Society thought the proceedings irregular and a special meeting was called, the matter investigated and by unanimous consent the names withdrawn, and thus the general practitioners of Charleston, who at first were doing an injustice to brother specialists, manfully acknowledged their error caused by a misapprehension.

No slur is cast upon these opticians or the quality of the glasses they supply, but my real object is to bring this matter before the profession for careful consideration. Specialists in various branches are recognized when they devote their time to the branch chosen, and it behooves the general practitioner to stand by his brother when in good repute. The glass is an orthopœdic instrument to the eye, but no one would think of sending a child with a club-foot to the instrument maker without first consulting the surgeon—yet the cases are parallel. No one can deny at this day that correcting errors of refraction and prescribing the necessary glass is a most important factor in the practice of the ophthalmologist.

Therefore, is it right and fair for gentlemen of prominence in the medical profession to give their names for *publication* for the benefit of non-professional men, when the practice of these men interferes with that of the specialist in good standing, who cannot even let it be known by a simple word on his door-plate that he practises in diseases of a special branch?

Charles W. Kollock.

Charleston, S. C., October 21, 1887.

NEWS ITEMS.

The Managers of the Pennsylvania Hospital have determined to create in the Department for the Insane positions for resident physicians; and they have authorized Dr. John B. Chapin, Physician-in-chief of the Hospitals for the Insane, to select and refer to the Board one physician for each department, to serve for so many months, as may be decided upon hereafter. This will give young physicians an opportunity to observe and study the various stages of mental diseases, which will be of great value to them in their professional life, in the early treatment of such patients coming under their care.

The New York Quarantine.—The *Sanitary News* of October 15, 1887, publishes its investigation of the New York Quarantine as follows:

Summing up, with reference to the exclusion of cholera and smallpox, the quarantine plant and facilities of the port of New York are unrivalled, the printed regulations judicious, and with proper vigilance the service should suffice to prevent either of these diseases from obtaining access to the country through this avenue. But the entire system is hampered by a vicious financial policy which is, in effect, a farming-out of the service. At the other important ports the fees go directly to the municipality or State, and the chief executive officers are paid fixed salaries, and are provided with such employés as may be necessary to the proper and efficient conduct of the quarantine.

New York may exclude cholera under the present system, but more confidance would be reposed in the result if less were demanded of professional ability, personal integrity, and executive firmness in the health officer, and if the system were freed from influences which are most deprecated by those who, without prejudice, best understand them.

Cholera found its way through this port to the eastern portion of the country in 1849, and to the country generally in 1865. No attention is paid to the vaccinal status of immigrants unless the disease is actually on vessels. As a natural consequence, smallpox has repeatedly been introduced into the interior through this port.

The Western Pennsylvania Medical College at Pittsburg, we are informed, has begun its second session, with a class of nearly 100 students.

The Congress of Hygiene adjourned October 2d to meet in London in 1891.

THE QUEEN has appointed William Scovell Savory, F.R.S., President of the Royal College of Surgeons of England, and Surgeon to St. Bartholomew's Hospital, to be Surgeon Extraordinary to Her Majesty, in the room of Richard Quain, deceased.

SIR WILLIAM GULL has suffered from a paralytic stroke, but of mild degree. The latest accounts of his condition are favorable. The paralysis is of the right side, and power has been regained in the upper extremity.

THE EMPEROR OF BRAZIL.—The *British Medical Journal* states that this active and intelligent monarch is a diabetic, in a somewhat advanced stage of the disease.

DR. KOCH, Director of the Hygienic Institute of the Berlin University, has received the Russian Order of St. Stanislaus of the 1st class.

A COMMITTEE TO INVESTIGATE HYPNOTISM.—Charcot, Brouardel, Marey, and others have been appointed a committee of the French Academy of Medicine to investigate results obtained by Luys under hypnotic conditions.

THE SURPLUS FUND FROM THE VIENNA CONGRESS OF HYGIENE is to be devoted to the establishment of an institution for perfecting hygienic manufacture in all its aspects.

LEGISLATION AGAINST COLOR BLINDNESS.—In a recent number *Science* had occasion to refer to the beneficent law now existing in several of the States, prohibiting the employment of color-blind persons on the railroads of those States, and instanced Massachusetts as the first one to enact such a law. At a meeting of the Brotherhood of Locomotive Engineers, just held in Boston, at which three thousand railroad-engineers were said to be present, one of the speakers who addressed the audience was received with great applause, because, as the chairman said in introducing him, "he secured the repeal of the obnoxious color-blind law,"—a questionable honor, if true; but, from the best information which we are able to obtain, the law still exists, although it has been modified in a manner which in no wise weakens, but, on the contrary, rather strengthens, its practical working. It is not to be wondered at that railroad employees object to a test of their qualifications which may result in the loss of their positions, but we imagine that any attempt to repeal the law would meet with the determined opposition of the entire travelling public. The single instance which occurred in Connecticut, where twenty-one railroad employees were found wholly color-blind, is sufficient proof of the necessity of such a law, and, instead of endeavoring to repeal existing laws, a strong and continuous effort should be made to extend their provisions to other States.—*Science*, September 30, 1887.

THE ITALIAN UNIVERSITIES.—During the last academic year 15,161 students were enrolled at Italian Universities, an increase of 722 over the preceding year. Naples was most frequented, 4083 students having attended there.

THE SUPPLY AND CONSUMPTION OF COCAINE.—DR. SQUIBB describes his manufacture and the consumption of cocaine as follows in the *Ephemeris* for October, 1887:

The one kind is a light green, thin, small leaf so very much broken up that hardly an unbroken leaf can be found. This contains a small proportion of stems and twigs, and quite a number of the yellow seed capsules. It has the appearance of having been beaten off of the trees, and certainly is not hand-picked.

The other kind is a very much larger, thicker leaf, much less broken, of a duller, darker green, or brownish green color, and less uniform in color. A considerable proportion of the leaves are unbroken, and stems and twigs are absent or rare. This variety looks as though it was hand-picked.

The first kind is called in the market Truxillo coca, and the lots now command as they arrive 23 to 25 cts. per pound. The second is called Huanuco coca, and about 30 to 32 cts. per pound is asked for it whether here or to arrive, an advance on both varieties of about 15 per cent. The localities which give the market names to these kinds are both in Peru, and considerably north of Lima,—the first near the coast, the other farther south and inland, but whether they come from these localities or not is uncertain, since names are sometimes used to conceal sources of supply. The present high price of Huanuco is based upon the customary report of a failure of a crop.

What has become of the fine quality of coca produced in Bolivia during the last six months is not known, none having reached either this market or Hamburg or London, so far as known to this writer. All received appears to have come from Peru.

The writer has used since his last report in these pages 238 bales of coca, 153 of the first variety and 85 of the second—total, 41,858 pounds. The highest price paid was 32 cts. and the lowest 15 cts., average 19 cts. —total cost, $7957.

This was all manufactured into hydrochlorate of cocaine and gave a total yield as sold and in stock of 922,917 grains or 131 pounds 13½ ounces.

This was made and sold within the ten months following the last report—that is from November, 1886, to August, 1887, both inclusive, an average of about 13¾ pounds per month, the demand pretty steadily increasing from about 6 pounds per month to about 18 pounds —both the lowest and the highest being, however, exceptional.

All was sold in three forms, namely, as hydrochlorate, as 4 per cent. solution of hydrochlorate, and a small quantity as uncombined alkaloid.

A large proportion of it was put up with much labor and expense in vials of 5 to 30 grains each, and the loss in putting up, so as to give full weight in each vial, exceeds 6 per cent. The loss in putting up eights, quarters, halves, and ounces was about 5 per cent., and for larger quantities was insignificant. The available yield as put up and sold is therefore below the real yield by the amount of these losses, and of all other incidental and accidental losses, but it is what the manufacturer must always base all his calculations upon.

The available yield from 41,858 pounds of coca being 922,917 grains, gives (922,917 ÷ 41,858 =) 22.05 grains of the salt to the pound of coca—all being calculated as hydrochlorate.

The Quain Bequest. — Mr. Richard Quain, F.R.C.S., F.R.S., has bequeathed almost the whole of his fortune, amounting to about £75,000, to University College, London, subject to certain annuities to family connections. The College will, we are informed, at once benefit to the extent of about £60,000, which sum is left to four trustees, to apply the annual income in "the promotion and encouragement in connection with University College, London, of general education in modern languages (especially the English language and composition in that language) and in natural science." The trustees, Lord Justice Fry, Sir William Jenner, Mr. George Brodrick (the Warden of Merton), and Sir George Young, are authorized to carry out the testator's wishes, "either by salaries or other payments to those who teach, or by endowing professorships, or by pecuniary aid to those who are being taught, as by endowing scholarships or fellowships, or in any other manner which the trustees may in their absolute discretion think proper," and they are requested to place themselves in communication with the Council of University College, with a view to preparing a scheme for carrying out the objects of the bequest. The testator desires that in any statement of the foregoing bequest the name of his brother, the late Sir John Richard Quain, shall be associated with his name.—*British Medical Journal*, October 8, 1887.

"Steeple Chase" Medical Journalism.—A writer in the *Gazette Hebdomadaire* of Paris of October 7, 1887, in speaking of the liberality of an American journal which offered to its exchanges full reports of the recent Washington Congress, remarks that in the large number of recent Medical Congresses at Washington, Vienna, Pavia, Toulouse, Carlsruhe, Wiesbaden, and Heidelberg, it has preferred to publish reports carefully analyzed and criticised by special correspondents and competent reviewers rather than to accept the hasty reports of impromptu reporters, vieing with each other in what the writer styles "steeple chase journalism." For this reason the *Gazette* did not publish the report to which reference was made, deeming those selected of more scientific value.

The Mutual Relations of Physician and Pharmacist.—The *Pharmaceutical Era*, of Detroit, offers a prize of $50 for the best essay on this subject, under the following conditions: 1. Any one interested in the subject may compete. 2. The essay must not exceed 2000 words in length, and must be received previous to January 1, 1888. 3. The MSS. must be free from the author's name, address, or other marks of identification. 4. The author's name and address must be inclosed with the manuscript on a separate paper. 5. All the essays submitted in competition for the prize are to be the property of the *Pharmaceutical Era*, to be published or not, at the discretion of the editor, but names of authors will be suppressed if requested. 6. A Committee consisting of five representative men chosen from the medical and pharmaceutical professions, to whom the essays shall be submitted anonymously, shall award the prize, and the names of the Committee will be announced with their decision.—*New York Medical Journal*, October 22, 1887.

Attempted Suicide of the Chief of the Vienna Hospital. — Dr. Länger, *primararzt* of the great Vienna Hospital, after a somewhat unpleasant interview with Prof. Boehm, the newly appointed director of the hospital, took a large dose of morphia with the intention apparently of committing suicide. He was, however, promptly treated by the performance of tracheotomy and the mechanical inflation of the lungs through the opening. By this means his life has been saved. Dr. Länger, who is greatly respected, has been for some time past subject to melancholia.—*Lancet*, October 15, 1887.

The Throat Hospital, Golden Square, London, has established a post-graduate course of instruction in diseases of the throat and nose, which promises to be well supported. Instruction in diagnosis and treatment is given by the physicians to the institution, Drs. Wolfenden, Bond, and Macdonald; and the practitioner is allowed the opportunity of handling the patients himself, under the guidance of members of the staff and their clinical assistants.

A Uterine Support for Horsewomen.—Finding that the women who ride in the "Wild West" Company now in London suffered severely at times from the jolting which they received, an English instrument maker has made a supporter consisting of a peculiarly shaped pad, with straps crossing the sacrum and meeting in front. Those who used them experienced marked comfort from them.

Calisthenics in Schools.—An important movement in the London schools has for its object the physical training of the pupils, and at present 1200 teachers are receiving instruction in this department, and such teaching has been introduced into 250 schools.

The Influence of Mental Impressions upon Wounds.—Professor Delboeuf of Liège is certainly the most versatile of living investigators, when one considers the great originality and suggestiveness of all the work he does. Ancient and modern languages, logic, general physics, and physiology, and especially experimental psychology, have received his attention by turns. His latest contribution is to therapeutics, and is a communication made on June 4 to the Belgian Academy, which will probably turn out to be of the greatest theoretical as well as practical importance.

We all are familiar with accounts of the wounds inflicted on themselves by African dervishes; but the statement which the narrators always make, that the wounds do not inflame, or may even be quite healed in twenty-four hours, probably often tends to discredit their whole description in the reader's mind. Delboeuf's observations now make these stories wholly plausible. It is well established that in certain hypnotic subjects a suggestion made during trance, that to a part of their body a cautery or a blister is applied, will produce, after due lapse of time, an actual vesication of the skin. The

hallucinatory feeling of inflammation produces in these persons a genuine inflammation. M. Delboeuf argued from this, that the feeling of pain, however useful in other respects, must itself be an inflammatory irritant, and went on to infer that the abolition of it from an actual wound ought to accelerate its healing. He immediately thought of some hypnotic subjects whom he had made anæsthetic, and in whom he had often admired the rapidity with which the wounds of punctures and pinchings disappeared, and proceeded to more systematic experiments, which, so far as they go, seem to verify his hypothesis perfectly. On a young woman whom he could make insensible by suggestion, he marked two corresponding spots, one on each arm, and made on each an identical burn with the hot iron, announcing to the patient that the one on the right should not be felt. The suggestion took effect; and the next day, when the bandages were taken off, and the left arm presented a vesicled sore with an inflammatory area three centimetres in diameter, the right arm showed only a clean scorch of the skin of the exact size of the iron (eight millimetres diameter), without redness or inflammation. On another subject similar results were obtained with burns and blisters, the spots chosen being near together on the same arm or on the neck. The experiments are few in number, and ought to be multiplied; but the reader will immediately see the vista which they open. Many of the results of the "mind cure," and the strange fact, so long known, of opium controlling inflammations, are explained by M. Delboeuf's principle. So is the popular belief in "hardening" one's self by a little judicious indifference, and neglect of one's condition. Local pain is useful in leading us to protect the wounded part from mechanical abrasion—several of M. Delboeuf's experiments were inconclusive, because the subjects, being insensible at the seat of their injuries, allowed them to get scraped, etc.—but it has the drawback of exciting reflex changes of nutrition of an unfavorable kind. Anæsthetizing a wound prevents these reflex changes. M. Delboeuf, suggesting to a very sensitive subject that she should not feel a severe dental operation, was assured by the dentist that what he found most extraordinary in the whole performance was the absence of the salivary secretion which would usually have accompanied it.

It is to be hoped that others, with better facilities for surgical experimentation than a professor of classical literature like M. Delboeuf, will follow the example he has so happily set them.—*Science*, September 30, 1887.

POISONOUS CANDIES.—Prof. Erastus G. Smith, professor of chemistry at Beloit College, Wisconsin, has been analyzing samples of candy purchased at the shops in that city, and found them colored with cochineal for red, lead chromate (poison) for yellow and green, and aniline for orange. The hoarhound candy was highly colored with eosine. Purchasers of confection highly colored should be careful and refuse yellow and green, as chromate of lead is a deadly poison. Several cases of poisoning from this coloring on confection have occurred at Pittsburg.

THE JOHNS HOPKINS HOSPITAL.—It has been authoritatively announced that the Johns Hopkins Hospital will be opened for the reception and treatment of patients in the fall of 1889. This institution is in no wise affected by the failure of the B. & O. R. R. to pay its semi-annual dividend, as has been intimated. The funds of the hospital are not invested in B. & O. stock. —*Maryland Medical Journal*, October 22, 1887.

VON LANGENBECK.—The funeral of this distinguished surgeon was fully attended by the representatives of German science.

The feeling of profound and affectionate honor in which he was held is expressed by the *Berliner Wochenschrift* as follows: "We honored him, the gentle, kindly, genial master at whose feet we all had sat, whose incessant general labors we had beheld with admiring astonishment; we one and all honored and loved him as a kind father, and this feeling of affection and honor accompanies him to his grave, and will mourn over his perishing form."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY, FROM OCTOBER 18 TO OCTOBER 24, 1887.

WOLVERTON, W. D., *Major and Surgeon*.—Detailed as a member of the Army Retiring Board at Washington, District of Columbia, convened by *S. O. 78, A. G. O.*, April 5, 1887, vice Major C. C. Byrne, Surgeon, hereby relieved.—*S. O. 241, A. G. O.*, October 15, 1887.

GARDNER, EDWIN F., *Captain and Assistant Surgeon*.—Relieved from duty at Fort Reno, Indian Territory, and ordered for duty at Fort Lewis, Colorado.—*S. O. 242, A. G. O.*, October 15, 1887.

EWING, C. B., *First Lieutenant and Assistant Surgeon*.—Granted leave of absence for one month, on surgeon's certificate of disability.—*S. O. 112, Department of the Missouri*, October 18, 1887.

COCHRAN, JOHN J., *Captain and Assistant Surgeon*.—Now on duty at the Presidio of San Francisco, California, is assigned to temporary duty at Headquarters, Division of the Pacific, as assistant to the Medical Director of that division.—*S. O. 244, A. G. O.*, October 19, 1887.

JARVIS, NATHAN S., *First Lieutenant and Assistant Surgeon*. Ordered for field duty in the Department of the Platte.—*S. O. 240, A. G. O.*, October 21, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 22, 1887.

BEYER, H. G., *Passed Assistant Surgeon*.—Ordered to hold himself in readiness for orders to the "Trenton."

WHITE, S. S., *Assistant Surgeon*.—Ordered to hold himself in readiness for orders to the "Trenton."

STEPHENSON, F. B., *Passed Assistant Surgeon*.—Detached from the "Bache," and ordered to the Navy Yard, Boston.

STONE, E. P., *Assistant Surgeon*.—Detached from the "New Hampshire," and ordered to the "Bache."

STREET, T. H., *Surgeon*.—Detached from the "Patterson," and placed on waiting orders.

A Naval Medical Examining Board is now in session at the Naval Hospital, Philadelphia, Pa., for the purpose of examining candidates for admission to the Medical Corps of the Navy. Circulars of information can be obtained on application to the President of the Board. There are twelve vacancies in the list of Assistant Surgeons.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

EXTRA ISSUE.

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A WEEKLY MEDICAL JOURNAL.

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THE paramount importance to the public of preventing the importation of cholera into the United States calls for a special issue of THE MEDICAL NEWS, giving in full the report of the Commission appointed by the College of Physicians of Philadelphia, consisting of Drs. James C. Wilson, E. O. Shakespeare, and R. A. Cleemann, to investigate the condition of affairs in the Quarantine of New York.

It will be seen that the grave dangers which exist may render prompt action necessary with a view to establishing some national system of quarantine for the protection of the country.

REPORT OF THE COMMITTEE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

APPOINTED TO INVESTIGATE THE EFFICIENCY OF OUR QUARANTINE ARRANGEMENTS FOR THE EXCLUSION OF CHOLERA AND OTHER EPIDEMIC DISEASES.

TO THE PRESIDENT AND FELLOWS OF THE COLLEGE:

Your Committee appointed at the meeting of the College held October 5, 1887, to consider the present danger of the importation of cholera into this country, and to secure concerted action among the medical societies of the land in urging upon the State and National authorities the adoption of a uniform and efficient system of quarantine for all exposed ports, respectfully reports as follows:

The acceptance of the germ theory of infectious and contagious diseases, or the probability at least of its truth, places in a new light the management of quarantine for detention and disinfection of vessels and their passengers. Anterior to the promulgation of this doctrine the etiology of these diseases was so obscure, that it is not a matter of surprise that such diverse views existed on the subject of quarantine; as shown by its absolute abandonment in Great Britain, for instance, and, on the other hand, by its enforcement with unreasonable severity in the southern ports of Europe. There was no clear idea of that which was to be guarded against, and, therefore, no measures generally and unreservedly accepted as a means to the desired end.

In view of the nature of the work with which your Committee was charged, we found ourselves confronted with two questions of urgent importance:

I. What are the requirements of an efficient maritime quarantine against cholera?

II. To what extent do the existing arrangements at the ports of New York, Philadelphia, and Baltimore fulfil these requirements? [We speak of these ports only, because circumstances did not permit more extended personal investigations, and there is no reason to believe, from the published official descriptions, that the conditions of the other ports of entry upon our Atlantic and Gulf coasts are in any respect superior.]

I. In reply to the first of these questions, we cannot do better than quote at length from the editorial pages of a recent number of THE MEDICAL NEWS.[1]

"Measures of prevention, to give the greatest possible guarantee of success in extinguishing an incipient epidemic of cholera, should, in the first place, be based upon the most exact knowledge we possess of the cause, mode of attack, and manner of spread of the disease; and, in the second place, these measures should be intelligently, thoroughly, and rigidly enforced.

"What are the considerations involved in the first category? Probably nine-tenths of intelligent and experienced physicians all over the world, even including those of India, have for years admitted that there is most convincing proof that the active cause of the disease is a specific, material, living entity, of extremely minute size, endowed with the power of self-propagation, and of exceedingly rapid multiplication in enormous numbers; that among animals it naturally attacks man alone, assailing him only by way of the intestinal canal; that the evacuations from the bowels contain the active cause of the disease, and that when this agent in any manner—as through drinking water, milk, food, or the handling or washing of contaminated personal effects, etc.—reaches the intestines of another susceptible person, the disease may be thereby transmitted from the sick to the healthy; that the active agent exists in the dejecta of the lightest and most imperceptible no less than the severest and most deadly forms of the disease, and is known to be transportable from place to place through the movements of man and his personal effects.

"Proceeding from this basis, logical deduction and common experience alike demonstrate the absolute

[1] October 15, 1887, pages 455, 456, 457.

necessity and efficiency of such measures of prevention as the following:

"*a*. Speedy recognition and isolation of the sick; their proper treatment; absolute and rapid destruction of the infectious agent of the disease, not only in the dejecta and vomit, but also in clothing, bedding, and in or upon whatever else it finds a resting-place.

"*b*. The convalescents should remain isolated from the healthy so long as their stools possibly contain any of the infecting agent; before mingling again with the well they should be immersed in a disinfecting bath, and afterward be clothed from the skin outward with perfectly clean vestments, which cannot possibly contain any of the infectious material.

"*c*. The dead should be well wrapped in cloth thoroughly saturated in a solution of corrosive sublimate, 1 to 500, and without delay, cortège, or lengthy ceremonial, buried near the place of death in a deep grave, remote as possible from water which may, under any circumstances, be used for drinking, washing, culinary, or other domestic purposes. (Cremation, of course, is by far the safest way of disposing of cholera cadavers.)

"*d*. Those handling the sick or the dead should be careful to disinfect their hands and soiled clothing at once, and especially before touching articles of food, drinking, or culinary vessels.

"*e*. In the case of maritime quarantine, the well should be disembarked and placed under observation in quarters spacious enough to avoid crowding, and so well appointed and furnished that none will suffer real hardships.

"*f*. Once having reached the station, those under observation should be separated in groups of not more than twelve to twenty-four, and the various groups should, under no pretext, intermingle; the quarters for each group should afford stationary lavatories and water-closets in perfect working condition, adequate to the needs of the individuals constituting the group, and supplied with proper means of disinfection; there should be a bed raised above the floor, proper coverings, and a chair for each member of the group, each person being required to use only his own bed; there should be a common table of sufficient size to seat around it all the members of the group, who should be served their meals from a central kitchen, and with table furniture belonging to the station and cleaned by the common kitchen scullions.

"*g*. Drinking-water, free from possible contamination and of the best quality, should be distributed in the quarters of each group, as it is needed, and in such a manner that it is received in drinking-cups only; there should be no water-buckets or other large vessels in which handkerchiefs, small vestments, children's diapers, etc., can be washed by the members of any group.

"*h*. Immediately after being separated into groups in their respective quarters, every person under observation should be obliged to strip and get into a bath (a disinfecting one is preferable), and afterward be clothed with fresh, clean vestments from the skin outward. Every article of clothing previously worn should be taken away and properly disinfected.

"*i*. Then all of the personal effects should be at once removed to a separate building, washed—if possible—and thoroughly disinfected, or, if necessary, destroyed. After disinfection they should be temporarily returned to the members of groups, when occasion requires a further change of clothing.

"*k*. Under no circumstances whatever should washing of clothing by those under observation be permitted. All used clothing should be first thoroughly disinfected (by boiling, when possible), and then should be cleansed, the disinfection and washing being done by a sufficiently trained and absolutely reliable corps of employés supplied with adequate appliances.

"*l*. All of those under observation should be mustered in their own quarters and be subjected to a close medical inspection, *while on their feet*, at least twice every day, in order to discover and isolate as soon as possible new cases which may develop; and, of course, the clothing and bedding of these new cases should be treated without delay in the manner already mentioned. In the mean time a watch should be set over the water-closets, for the purpose of discovering cases of diarrhœa, and, when discovered, such cases should be temporarily separated from the rest; they should receive judicious medical attention at once, and precautions should be taken as if they were undoubted, but mild, cases of cholera.

"*m*. The quarters should be kept thoroughly clean, and every surface upon which infectious material could possibly be deposited, including the floors, should be washed with a strong disinfectant twice daily, and oftener when necessary; evacuations from the bowels should be passed into a strong disinfectant; the hopper of the closet should be then flushed, and finally drenched with a quantity of the same disinfectant.

"*n*. For the proper attention to the sick, there should be two or more competent and experienced physicians, assisted by a sufficient corps of intelligent and efficient nurses, with hours of duty so arranged that a physician with a sufficient number of nurses be in constant attendance in the wards of the hospital.

"*o*. For the prompt recognition and separation of new cases, their temporary medical attention, the proper treatment of discovered cases of diarrhœa or cholerine, and of other maladies, and the immediate correction of every insanitary practice or condition by constant, vigilant, and intelligent supervision, there should be at least two or more competent and experienced physicians, with hours of service so arranged that a physician is on duty night and day among those under observation; and he should have subject to his orders, at any and every moment, a sufficient and efficient corps of nurses and laborers to carry out properly and promptly his directions.

"*p*. In order to prevent the intermingling of the various groups, to enforce obedience and order, and to make it absolutely impossible for the quarantined and their personal effects to have any communication with the exterior, a well organized and sufficiently large police corps should patrol the borders of the stations and the buildings day and night.

"*q*. Any group among whom there has developed no new cases of cholera, or of choleraic diarrhœa, during the preceding eight or ten days, may be regarded as harmless, and allowed to leave quarantine after each one is finally immersed in a disinfecting bath, and reclothed with clean garments from the skin outward; the garments removed being destroyed, or thoroughly disinfected and cleansed as above indicated.

"As yet no reference has been made to the crew, ship, and cargo. What has been said of the treatment of those under observation, applies to every one of the ship's inhabitants. The observation, isolation, and cleansing of the crew and their effects, could safely be performed aboard ship if necessary. The ship should be thoroughly cleansed and disinfected, particular attention being given to the quarters of the emigrants and crew."

II. The second question is to what extent do the existing arrangements at the ports of New York, Philadelphia, and Baltimore fulfil these requirements?

Your Committee began its work by personally inspecting the quarantine stations at New York, Philadelphia, and Baltimore, arrangements having been previously made with the respective officials.

QUARANTINE STATION AT NEW YORK.

The quarantine establishment, visited October 8th, consists of a boarding station, which is the residence of the Health Officer, situated on Staten Island, four miles below the city, just within the Narrows at the entrance of the harbor, and in connection with New York city by telegraph and telephone; of an island of observation known as Hoffman Island, and of another, Swinburne Island, on which latter is erected a large hospital building. These islands are artificial, being made of foundations of rock, covered with sand; are situated in the lower bay about five miles below the boarding station, and two miles from the shore.

Hoffman Island is probably four acres in area, and rises some eight feet above the level of the sea. There are upon it two large brick buildings of two stories each, and a smaller building, the latter provided with cooking and heating apparatus for the larger buildings. One of the large buildings is furnished with water-closets in each story, and a lavatory in the upper. The rooms of this building are without furniture or bedsteads.

The water supply of this island is as follows: There is a cistern lined with brick, sunken beneath the surface of the sand near each of the large buildings, to collect rain-water from the roof, but at the time of our visit the sunken cisterns contained Croton water brought from the city of New York. The openings of these cisterns are provided with caps. In addition to these, there are two iron tanks of considerable dimensions in the large buildings in which the water-closets are located, and they are elevated some distance above the head. One of these tanks is intended for fresh water, to be used for bathing; the other for salt water to be used exclusively for flushing the water-closets. We found that owing to imperfection in the apparatus, several of the water-closets could not be flushed. The iron soil pipes into which these closets empty lead into the sea, each pipe having, as we were informed, a number of right angles in its course. In the corner of one of the rooms containing the water-closets there was a barrel nearly full of a solution of corrosive sublimate, one part to five hundred. This was employed for the purpose of drenching the pans of the closets *after* they have been used and flushed. We found the seats and the floors of these water-closets extremely wet.

The lavatory was a small room opposite the water-closets of the second story, containing two metallic bath-tubs, and a few stationary washstands, supplied with fresh water from the above-mentioned tank. We were informed that the bath-tubs had not been used during the present emergency. Immediately opposite the water-closets on the lower floor, and beneath the lavatory, was a small room devoted to the uses of a temporary hospital. This room contained four bedsteads with the corresponding bedding, but no other furniture, and was occupied by three recently developed cases of cholera.

In the other large building there were constructed in corners on the first floor two disinfecting rooms, fifteen feet by twenty, each having one or more windows communicating with the external air. These rooms appeared to be otherwise air-tight. The remainder of the first floor constituted a large wareroom for the storage of baggage. The disinfecting apparatus was supplemented by a large wooden vat, located in the boiler-house, for the purpose of subjecting clothing to the action of steam, but it was not placed in position until after the first week of detention.

This island was occupied by upward of five hundred men, women, and children, passengers from the cholera-infected steamship "Alesia," who at that date had been upon the island sixteen days. They roamed at will over the island and through the rooms of the large buildings, except the one in the second story of the building in which the disinfection had taken place, which was occupied by a number of people of the better class, who seemed to have exclusive use of it.

These two buildings were supplied with a limited number of mattresses and blankets, which were collected together in piles. We learned that this bedding had been supplied by the steamship company, but that none of it arrived until five days subsequent to the debarkation of the passengers upon the island. The immigrants were permitted access to a portion of their personal effects after disinfection. Many of the people were engaged in washing their clothing. This washing was done in vessels of various kinds and in the immediate vicinity of the mouths of the sunken cisterns. At the time of our visit the latter were uncovered, and the ground around them was saturated with the water which had been

used in washing, and a number of people were scouring with this wet sand, the pans and tins in which they received their food and drinking water. They drew the water from the cisterns by pails and vessels of various kinds. According to information received, these cisterns had not been cleaned out in a number of years.

By reason of want of facilities for perfect flushing of the water-closets, due to a defect in the pumps, a supplementary latrine had been extemporized by digging a long deep trench in the sand not more than fifty feet distant from one of the large buildings, and about thirty feet from one of the cisterns. Notwithstanding these arrangements, it was impossible on account of the inadequate police, to prevent the people from defecating in any convenient spot, and although they had been enjoined by the Health Officer against the use of the water in the sunken cisterns for drinking purposes, there were no means of enforcing this order, for access to the cisterns could indeed be had at all times. Drinking water brought from New York city was distributed upon application at a tank in one of the buildings. Food supplied by the agents of the steamship company, and, as we were informed, brought to the island in their vessels, was prepared in the kitchen and distributed in sufficient quantities. This food, which was well cooked, consisted of bread, soup, macaroni, potatoes, pork, and beans. The dishes were generally used in common by families or small groups, and the absence of knives and forks was noteworthy.

The police force of the island consisted of one watchman assisted by an improvised corps of twelve of the more intelligent of the immigrants, each of whom received for his services, one dollar per diem. In addition to the police force, there were three or four men in the employ of the Health Officer, whose duties were attention to the disinfection of bag age, to the water closets, to the cleanliness of the buildings, to the detection of new cases of cholera and their removal to the temporary hospital, and to other similar matters. Besides these there were a cook furnished by the agents of the steamship company, and an engineer.

There was no resident medical officer upon the island. The Health Officer, who is a physician, visited the island once, and sometimes twice daily, for the purpose of inspecting the immigrants, and for the general conduct and direction of affairs. At these times the new cases which had developed in the intervals of his visits, were transferred to the hospital on Swinburne Island.

At the time of the arrival of the "Alesia," there were on board eight cases of cholera, all of which were at once transferred to the hospital on Swinburne Island. The rest of the steerage passengers, apparently free from the disease, were, with their baggage, landed on Hoffman Island, the cabin passengers and crew remaining on board the vessel. The clothing of the cholera patients was taken back from the hospital on Swinburne Island to Hoffman Island to be disinfected, and the same course was afterward pursued with the clothing of those who, having been taken ill with the cholera, were from time to time removed to Swinburne Island. Up to the time of our visit, sixteen days after the arrival of the ship, twenty-seven new cases of cholera had developed, of which three were discovered on the day of our visit. Of the eight sick at the time of the removal of the passengers from the steamer, five died, and of the twenty-seven cases attacked upon the island, nine proved fatal, making a total mortality of fourteen. As soon as the immigrants were landed from the ship, their baggage was taken from them and stored on the lower floor of the large building in which disinfection was carried out. The process of disinfection was as follows: The articles were separated, shaken out and hung up in the disinfecting rooms, three pounds of sulphur being burned for every 1000 cubic feet of space. The disinfection of the baggage for the first time occupied five or six days, during which period the immigrants were denied access to their effects and continued to wear the clothing which they had on when they left the ship. The steam disinfecting apparatus before referred to, was not placed in position until toward the end of the first week. After that the baggage was for a second time disinfected, a double process being employed: the clothing being first subjected to the action of steam and then to the fumes of sulphur. After the first disinfection, those whose clothing was accessible, were permitted to change their garments, and were thereafter assigned to sleep in a separate room, but were not prevented from mingling with the other immigrants during the day. No effort was made otherwise to separate the passengers into isolated groups, nor indeed was there, in our opinion, any adequate provisions to prevent occasional communication by means of small boats, especially at night, between Hoffman Island and the shore. We were informed that boats had not infrequently been seen hovering around the island, and had occasionally been warned off.

Swinburne Island, on which the hospital is located, is somewhat larger than Hoffman Island. The hospital, consisting of several one-story wooden pavilions, and the grounds are in excellent condition. The water supply is contained in sunken cisterns for the storage of rain water, placed in the open spaces between the pavilions. The mouths of these cisterns are on a level with the ground, and are covered with stone slabs. There is an adequate heating and cooking apparatus, and there are also a small disinfecting room and an apothecary shop.

The *personnel* of this island consists of a resident superintendent, who is not a physician, and, at the time of our visit, two male nurses, one of whom at different times had attended medical lectures. There was also an intelligent Italian gentleman, without medical or nurse training, who had volunteered his services in the care of the sick. The wards of the hospital were supplied with a sufficient number of bedsteads and necessary bedding in good condition, and contained nine patients, including the three discovered on the day of our visit, and who had been brought over with us from Hoffman Island.

The dead were buried in shallow graves on a sand-spit at the extreme end of Staten Island, known as Seguin's Point.

QUARANTINE STATION AT PHILADELPHIA.

We visited this station, known as the Lazaretto, October 13th, and made the following observations: It is situated on the right bank of the Delaware River, eleven miles from the city, on Little Tinicum Island, a large tract devoted to farming, which is separated from the mainland by Darby Creek. It comprises twelve acres belonging to the city and six acres the property of the United States Government. There is a large main building of brick, substantially constructed at the beginning of this century. The central portion of this building is occupied by the steward, and contains offices of administration. There are two wings, two stories and an attic in height, one of which is used by the crew of the boarding steam-vessel, and the other is arranged for hospital purposes, with a capacity of forty beds; but it is at present unfurnished.

Some distance in the rear of this building is a two-story brick hospital, with a capacity of thirty beds, and containing a dispensary. The dead-house is at the end of the building, but does not communicate with it. Near by is a wooden building ten feet by twelve feet, with a double wall and without windows, used for disinfecting by sulphur. There are at the station thirty-eight bedsteads, mattresses, and corresponding furnishing. Two small brick buildings near the river front accommodate the Lazaretto Physician and Quarantine Master, respectively.

The water-supply is obtained from old-fashioned wells with hand pumps. There are no large reservoirs for water, or large steam-boilers, or bath-tubs. There are several privies, but no water-closets. The station is connected with the city by telegraph. The Lazaretto physician, the Quarantine master, the male nurse, the telegraph operator, the crew of the boarding vessel, and the other attendants reside at the station during the quarantine season, which, as a rule, lasts from the first of June until the first of October. The steward resides at the station during the whole year. When the quarantine station is closed, the port-physician examines the vessels in the stream opposite the city.

On the government property is a large stone warehouse, about 120 feet by 40 feet, two stories and an attic in height, and also two brick buildings, in one of which resides the government inspector. There are no means of heating this warehouse, and its numerous windows are without sashes.

QUARANTINE STATION AT BALTIMORE.

This station, which is a new one, having been occupied only two years, is situated seven miles below Baltimore on the right bank of the Patapsco River, upon a point of the mainland jutting out into the stream and known as Little Hawkin's Point. The territory embraced in the quarantine station consists of fifteen acres, upon which are erected three frame dwellings, namely, a hospital of two stories with accommodations for about sixty patients, a dwelling for the medical officers, and another for the use of the crew of the boarding tug. The water is supplied by a spring about two hundred yards distant, being lifted by a windmill to a tank sufficiently high to permit of its distribution to the second story of the buildings.

The station has in store seventy-five tents to be used in emergency. No fence or wall separates the grounds from the adjacent land. At the time of our visit the hospital was unoccupied and locked up, so that we were unable to inspect the interior, but were informed that it was supplied with iron bedsteads and the necessary bedding. There is no special disinfecting apparatus at the station, nor any adequate means of disinfection; but there was pointed out to us a wing of the hospital designed for a kitchen, consisting of a small room with two windows and a door communicating with the building, in which, it was said, fumigation with sulphur could be practised. The water in front of the station is shoal, large vessels being obliged to anchor within two hundred yards of the main channel. The Quarantine Officer and his assistant, both of whom are physicians, besides the crew of the tug, a male nurse, and a gardener, reside at the station during the quarantine season, which usually ends October 31st.

We also visited the place four miles nearer Baltimore, which was formerly used as the quarantine station. It is now unoccupied and fallen into decay. It consists of a tract of land about four hundred acres in extent and several dilapidated buildings, including eight one story wooden barracks. This establishment is occasionally used as a pest-house for smallpox cases from the city of Baltimore. It is now unfurnished and untenantable.

CONCLUSIONS.

It is evident that the quarantine establishments at Philadelphia and at Baltimore fail in the most essen-

tial requisites of the necessary number of properly equipped buildings for the isolation and observation of a large number of immigrants.

In regard to the station at New York, the buildings are sufficiently large and numerous, and have adequate arrangements for heating and cooking, but they are not divided into a sufficient number of small compartments to permit the strict isolation of the immigrants into small groups. The water-closets were not sufficiently numerous, nor were they all in good working order: neither were there enough bath-tubs. The pumps, by which the supply of sea water used for flushing these closets was obtained, were out of order, and a period of two weeks elapsed before the necessary repairs could be made. It is also worthy of note that the soil-pipes only reached the sea by the already mentioned series of angular turns.

The necessary use of the supplementary latrine we have described; objectionable in construction and situation, as it was, it constituted a menace to the safety of the immigrants detained upon the island, among whom new cases were from day to day occurring. The dangers of infection were still further increased by the fact that the immigrants could not, under the existing state of affairs, be prevented from defecating at any convenient spot.

There was no provision for the general washing of clothing by the authorities. As a result of this defect, there arose the exceedingly dangerous practice of the washing of clothes at the cisterns by the immigrants themselves. The existence of underground cisterns at a station of this kind is, in itself, highly objectionable. All water reservoirs should be inaccessible to the immigrants, and should be placed above ground in such a manner as to avoid all danger of accidental contamination.

The disinfecting chambers were sufficiently capacious, but the existence of windows in them was a fault of construction which would seem decidedly to impair their efficiency.

The lack of bedsteads, chairs, tables, and proper eating utensils, added to the hardships of the immigrants and to the dangers of infection.

The location of the room used as a temporary hospital, namely, directly opposite one of the water-closets, and the fact that patients, known to have cholera and placed in this hospital, were allowed to use the water-closets in common with others, constituted a serious danger, and suggested the advisability of the use, for this purpose, of a separate building provided with its own water-closets and system of drainage.

Your Committee feels called upon to comment upon the absence of a resident medical officer at this station, and of an adequate force of watchmen, patrolmen, and attendants. As a consequence of these defects of organization, the well-recognized requirements of a quarantine of observation as pointed out in paragraphs o, p, and q above, could not possibly be fulfilled. The possibility of occasional clandestine communication between the detained immigrants and their friends by means of small boats, constituted a danger to the country, difficult to estimate, and against which, so far as we could learn, there were no certain precautions.

There was, in fact, no official supervision of the personal hygiene of the detained, no compulsory bathing or washing. The absence of towels in the lavatory and of paper in the water-closets, was notable. Soiled hands and filthy clothing indicated habits which favored the transmission of the cholera infection from person to person, particularly as the custom of several individuals eating from a common dish, without knives or forks, was frequently observed.

One of the results of the absence of bedsteads was the promiscuous heaping together of the mattresses and blankets during the day, in order to make room for washing the floors with disinfectant solutions; the bedding was thus doubtless used on successive nights by different persons, constituting a very probable means of transmission of the disease if they should become soiled by dejecta or vomit. Furthermore, as there was an insufficient number of matresses, two or more persons must have, in many instances, occupied one bed.

The hospital building on Swinburne Island appeared to be excellently adapted to its purposes. The use of underground cisterns for the storage of water is, however, here also objectionable. As there were no less than nine cases of cholera in the wards, at the time of our visit, some of whom were desperately ill, your Committee noted with surprise the absence of a resident physician, a fact that demands no further comment. And it was a reversal of modern ideas to find male nurses in charge of female patients.

Your Committee was at a loss to understand why the clothing of patients was sent back to Hoffman Island to be disinfected, as there is a disinfecting chamber in connection with the hospital. We were informed that the convalescents were, as soon as they were strong enough to be about, returned to Hoffman Island, without having been previously bathed and disinfected.

The recent arrival of the "Britannia," another steamship of the same line, with a large number of Italian immigrants from the infected port of Naples, among whom, if press reports are true, cholera evidently made its appearance during the voyage, its existence being either not recognized by the ship's surgeon, or else concealed by the deliberate falsification of the ship's sanitary record, has already,

in the opinion of your Committee, seriously increased the present danger of the ultimate introduction of cholera into the country through the port of New York. It would seem that if the importation of immigrants directly from a European port notoriously infected, is not to be temporarily prohibited as a necessity of public safety, or if the treatment of these immigrants, after their arrival at the New York quarantine station, is not to be immediately and radically improved, our protection against an epidemic at the present time must rest mainly upon the fortunate circumstance of the near approach of a season in which the disease does not usually spread. The continuance of cholera among the passengers of the "Alesia" so long after their removal to the station of observation, in itself demonstrates the inefficiency of the measures which have been adopted and enforced for its extinguishment there. Although we have not yet heard of the development of the disease anywhere on the main-land, nevertheless, in view of the almost uncontrollable tendency of cholera to spread at times, and of the original insufficiency and the present faulty constitution of the police force on Hoffman Island, we feel impelled to believe that the immunity up to the present time has been owing to singular good fortune, rather than to good management.

Moreover, in our opinion, it is necessary that the personal effects of Italian immigrants directly from the infected ports shall be, in all cases, thoroughly disinfected before they are permitted to land, whether the word cholera makes its appearance in the ship's log and the sanitary record of the voyage or not. It is a well-known fact, established by numerous instances, that even when immigrants from an infected locality have themselves remained free from disease during the voyage, their baggage, packed before starting, has been the conveyer of the infection to their point of destination. The passengers of the steamship "Independente," most of whom were shipped directly from the infected port of Palermo, although it is stated that during the voyage no case of cholera developed, come under this category. The recent action of the Surgeon-General of the Marine Hospital Service, and the alarm of the health authorities of the cities of Chicago and St. Louis, seem, therefore, not without some just foundation.

It should be stated, however, that we have learned through the medium of the public press that an attempt has been made to remedy a few of the defects above pointed out. What has been done would appear, however, to be in the direction of improvement in minor matters, rather than in such radical changes as would insure the country against the dangers to which it is exposed.

In the conduct of its personal investigations, and in the preparation of its report, your Committee has dealt solely with patent facts and plain truths which would meet the eyes and occur to the minds of any unprejudiced and competent men charged with a similar duty. To lay the simple statement of these facts before physicians who are in possession of modern knowledge concerning the nature, cause, mode of production, and means of prevention of such a virulently infectious disease as Asiatic cholera, is to prove beyond rational dispute that the present quarantine, as a safeguard at the ports under consideration, is dangerously and essentially imperfect.

It is natural, after having made our comments on the defects of the quarantine stations we have described, that we should endeavor to point out their causes and probable remedy. There is one cause so prominent, that we may dwell on that alone. It is the great expense. Were it not for the question of money, there would have been physicians constantly in attendance at the New York station, and, consequently, better management and discipline would have been maintained, while at Philadelphia and Baltimore there would have been adequate establishments provided for the isolation and observation of large bodies of immigrants.

Municipalities and States are wont to scrutinize every dollar of their money appropriations, bringing their expenses down to the closest living limit. Quarantine in this country being, as a rule, enforced mainly against yellow fever and smallpox, a mistaken economy has caused no provision to be made for the more perfect establishments absolutely required for protection against cholera.

Philadelphia, Baltimore, and other ports of a more limited commerce, are unable to spend as much on their stations as is New York, with its large revenues from that source, yet an inefficient quarantine at any station exposes the whole country to the dangers of the importation of disease. But it is manifestly unfair that a single municipality or State should defray the expense of protecting the whole public.

How, then, can we have equally complete stations all along the coast? We believe that this can be effected by putting quarantine into the hands of the National Government. We know that there are legislative difficulties in the way; that quarantine partaking of the nature of police regulation, its exercise, it may be claimed, belongs to the local authorities. Yet, even if it be conceded to be a police regulation, its scope is not local, but extends over the whole country, and it would seem, in justice, that it should be exercised and paid for by the whole country. Objection is sometimes made to quarantine on the ground that commerce is unduly interfered with, or even destroyed. A modern quarantine, however, does not necessarily involve the detention of cargo, nor prolonged detention of

the passengers. It is now known that in the case of cholera the disease germs infest the persons, clothing, and surroundings of the passengers and crew, while the cargo, except in some rare instances, is free from infection. Non-infected vessels require no detention whatever, the health officer examining them in transit.

Not to speak of the danger which threatens the whole country, the exposure, suffering, and loss of life that have occurred among the passengers of the "Alesia" detained at the quarantine of observation on Hoffman Island, have been due to the imperfect manner in which the measures of quarantine have been there carried out. Had the details of isolation and disinfection set forth in the earlier pages of this report been immediately and effectually put in force, the passengers who were not already infected at the time of leaving the ship, and this includes the whole number with very few exceptions, might have been released from quarantine in eight days, without the slightest risk to the country.

The thanks of the Committee are due to the quarantine authorities of New York, Philadelphia, and Baltimore for courtesies extended to it in conducting the investigations upon which this report is based.

Your Committee offers the following resolution:

Resolved, that in order to secure concerted action among the medical societies of the United States looking to the early adoption of a uniform and efficient quarantine of all exposed ports, the Committee be continued and be authorized to issue an address to medical societies of the country, and seek their coöperation.

All of which is respectfully submitted.

J. C. Wilson, *Chairman.*
E. O. Shakespeare,
R. A. Cleemann.

Philadelphia, October 28, 1847.

CHOLERA AND QUARANTINE.

The report of the Special Committee appointed by the College of Physicians of Philadelphia to investigate our present sanitary defences, was presented to the College last evening, and it clearly shows that the quarantine arrangements of our coast are greatly insufficient for the accomplishment of the only object of their existence.

The establishments at Philadelphia and Baltimore are entirely inadequate for the proper treatment of even an emergency as has been present for the past month in the port of New York. While the plant of the New York quarantine establishment is altogether far superior to that of any other port in this country, yet in many respects it lacks the essential facilities for the handling of large numbers of immigrants under observation, in such a thorough manner as to prevent the spread of infectious diseases among them while under detention.

Whilst many of the shortcomings at New York are the natural consequence of parsimonious appropriations by the State or municipal authorities, yet the administration of affairs at the quarantine station appears, also, to be seriously at fault.

The absence of medical officers, and of an efficient corps of experienced attendants at Hoffman and Swinburne Islands, is, in our opinion, inexcusable.

The neglect to separate and isolate infected groups has had doubtless considerable to do with the continuance of cholera among the detained immigrants, and a failure to enforce habits of personal cleanliness, together with the insufficient supply of eating utensils, has greatly increased the means of disseminating the cholera poison.

The practice of promiscuous washing of clothing around the mouths of water cisterns, which no doubt occasionally supplied some of the people with drinking water, was, in the light of experience, exceedingly liable to spread the disease.

The carelessness with which the detained immigrants have been guarded is surprising. During the first weeks the number of the force was absurdly insufficient to prevent communication with the shore, and although it has been increased, yet the fact that all but one of the policemen were chosen from among the immigrants under detention, seems in itself to constitute a source of danger.

The present uneasiness created by the landing and transportation inland of the immigrants recently brought by the "Independente" from Palermo, after only twenty-four hours' detention at the New York Quarantine, is not without cause. Experience has shown that it is dangerous to place any great faith upon the statements and records of the ship's officers concerning its sanitary condition. Moreover, it is quite possible that the baggage could become infected in the localities whence these people migrated, and retain the infective agent while packed away and unused during the voyage, to become active in the production of the disease at any time subsequently when handled or washed.

It is, therefore, necessary to treat the baggage of all incoming immigrants from infected ports as if the disease had actually made its appearance on the ship. The passengers should be given a disinfecting bath and clothed in clean garments and then kept under observation until the expiration of the period of incubation of the disease—say, five days. It is needless to add that these precautions should be observed in the case of every ship arriving from an infected locality.

STILLÉ ON CHOLERA.
By Alfred Stillé, M.D., LL.D. 12mo., 163 pages, with chart. Cloth, $1.25.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE TRUE PLACE OF MILK IN THE TREATMENT OF DIABETES MELLITUS.

BY JAMES TYSON, M.D.,

PROFESSOR OF GENERAL PATHOLOGY AND MORBID ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA, ONE OF THE PHYSICIANS OF THE PHILADELPHIA HOSPITAL, ETC.

THE very emphatic declaration by Dr. Austin Flint, Jr, in THE MEDICAL NEWS of July 9, 1887, as to the harmfulness of milk in the treatment of diabetes mellitus seems to call for some reply from those who have been in the habit of regarding it with greater favor, and as I have published statements which distinctly commend its use under circumstances where Dr. Flint apparently directly condemns it, it appears not inappropriate that I should come forward and explain.

In the first place, I am not aware that any one, except Dr. Donkin, claims that milk is a specific for diabetes mellitus. My experience thoroughly sustains that of Dr. Flint, that "the so-called specifics for diabetes have little if any effect." Nor do I believe that a specific remedy for diabetes is likely to be discovered while its pathology is so ill determined as at present. There is reason to believe that we are able to influence the quantity of glucose in the urine of a given case by more than one drug. Thus, opium, and especially its alkaloid codeine, is well known to have this effect. In fact, codeine is by far the most active drug in this respect known to me. The bromide of arsenic, in the shape of Clemens's or Gilleford's solution, undoubtedly is influential. Ergot I have more than once seen reduce the quantity of sugar and urine. Salicylate of sodium in the hands of competent observers has been similarly credited. Finally, I have reason to believe, although my experience has as yet been too limited to justify any positive conclusion, that the treatment by lithium carbonate and sodium arseniate, recently announced by Martineau, but really originating with the late Prof. Rouget, may act similarly. Yet I am free to say that none of these remedies in my hands has ever cured a case, and I can cordially confirm Dr. Flint in the view that by far the most efficient treatment has been the dietetic.

And it is as a dietetic measure that I use milk, and always *skim milk*, in the beginning of treatment. It has happened to me time and again that glucose has completely disappeared from the urine and the quantity of the latter been rendered normal within a week after instituting the skim-milk treatment, and this, too, in cases where an antidiabetic diet, from which all kinds of bread were excluded, had failed to produce the same effect. On the other hand, it has happened to me, and I have now such a case, in which the use of milk without any drug was promptly followed by a reduction in the amount of glucose, which was not, however, permanent. The patient is an adult, male, aged thirty-nine years. The case is quite an acute one, in which the symptoms had set in but six weeks before he consulted me; at that time his urine contained fully eight per cent. of sugar. I immediately ordered him on an exclusive skim-milk diet. He himself much preferred buttermilk, and as I thought the treatment would be essentially the same I permitted it. Under this treatment the sugar rapidly declined until at the end of 20 days it amounted to but 0.9 of 1 per cent. One week later, however, it had risen to 3 per cent. I then withdrew the milk and placed him on Clemens's solution of bromide of arsenic, in three-drop doses, along with an ordinary diabetic diet including gluten bread. A week later the sugar had reached 4 per cent. I then ordered him to omit all bread and increase the Clemens's solution to 5 drops three times a day, and further to increase one drop daily. On the 25th, a week later, he was taking 21 drops of Clemens's solution a day and the sugar amounted to 6.75 per cent. By August 1st, nine days later, the sugar had been reduced to 2½ per cent. He was now taking 25 drops a day and there was slight puffiness under the eyelids. I reduced the dose to 5 drops three times a day, and in eight days made another analysis, discovering 3.6 per cent. Thus, the glucose, which on a buttermilk diet had fallen to less than 1 per cent., but had again risen to 3 per cent., and during the administration of bromide of arsenic and an antidiabetic diet from which all bread was excluded had again declined to 2½ per cent., again began to increase while the same treatment was continued.

I then placed him on the solution of lithium carbonate and sodium arseniate,[1] directing him to drink not less than one quart and not more than two quarts of the solution in twenty-four hours. After he had been on the treatment for three weeks a specimen of the urine had a specific gravity of 1.042 and contained 3.6 per cent. of glucose—that is, it remained at the same point as while he was taking the bromide of arsenic. Another analysis eleven days later gave precisely the same result while the quantity of urine had again increased 50 per cent. He complained also of severe pains in his feet and legs, and of obstinate constipation. I then added twenty grains salicylate of sodium three times a day together with an aperient pill of blue mass, comp. ext. of colocynth and hyoscyamus. Thirteen days

[1] In preparing the solution in this and other instances I directed simple non-carbonated water while the original prescription of Martineau's called for carbonic acid water. I have been unable to discover any difference in result whether carbonic acid water or non-carbonated water was used as the menstruum.

later the sugar had fallen to 1.4 per cent., while the pains in the feet and legs had disappeared, and the quantity of urine was normal. The pill had been efficient in regulating his bowels. I may add that in my experience the symptoms of true diabetes are invariably aggravated by constipation and torpor of the liver. Two weeks later the quantity of glucose had again risen to 4½ per cent., later to 5 per cent., but still later it had fallen to 4.2 per cent. for evening urine, the previous analyses being of morning urine.

It will be seen that in this case the use of buttermilk was followed by a decided reduction in the quantity of sugar, a reduction which exceeded that under any other treatment adopted. But it was not permanent. Nor was that under the bromide of arsenic and anti-diabetic diet more permanent. I cannot myself think that the substitution of buttermilk, which, if here permitted, could have altered the result. Indeed, on theoretical and practical grounds, one would expect the result to be even more satisfactory. For, in the first place, the fat is at least as much removed in the buttermilk as in the skim-milk, and in the second place, much of the sugar of milk of skim-milk is converted into lactic acid in buttermilk, while the experience of Cantani goes to show that lactic acid is an efficient remedy in diabetes.

Another striking instance of the effect of a pure skim-milk diet in diabetes mellitus is the following: A very active and successful business man, aged fifty-two, consulted me in June, 1884, with diabetes mellitus, which he had apparently had for three years. As is the case with so many at that time of life, he was so little inconvenienced by the symptoms, that he could hardly be made to realize its seriousness. When he came under my observations, he had, however, the thirst, dryness of mouth, and polyuria, and an analysis discovered 7½ per cent. of sugar with a specific gravity of 1.037. The treatment instituted was purely dietetic without milk, except a glass or two at meals. The effect was prompt. In a week the specific gravity was 1.031, and it contained 5 per cent. of sugar. The thirst and polyuria had diminished. In another eight days the sugar had declined to 4 per cent., and by June 30th, 2½ per cent.

The other symptoms were so totally relieved that I saw nothing more of the patient until January of the next year, when he reported with 2½ per cent. of sugar in his urine, which had a specific gravity of 1.027. He remained under my care on a diabetic diet, variously strict, and with a corresponding range in the sugar, which I note was at various times 7 per cent., 2½ per cent., 6.6 per cent., 4 per cent., 2½ per cent., 3.3 per cent., etc. Continuing actively engaged in large financial schemes he did not report until December, 1886, when he said that he had been pretty well all summer, except in the early part of July, when he had an attack in which he seemed to lose partially the use of his limbs. He continued to be able to walk, although with difficulty. This condition passed off in a few days. He continued well until the day before his visit, when a similar loss of power appeared in his hands and legs, especially shown in a difficulty in signing his name. The urine contained 3.3 per cent. of sugar, but there was no undue thirst, and he did not have to rise at night to pass water.

On January 1st, I was asked to meet the patient's family physician in the country. There had occurred total paralysis of the right arm, and partial loss of power of the corresponding leg. There was 2½ per cent. of sugar in the urine. He was immediately put to bed and upon a pure skim-milk diet. On the 5th the sugar was 2 per cent.; on the 9th there remained but ½ per cent., on the 13th a ¼ per cent., and on the 15th there was not a trace of sugar. Except a temporary return of a fractional part of 1 per cent. of glucose, the urine has remained entirely free, although the patient has long since returned to a selected diet of vegetables and meats, bread and the pure farinacea being alone excluded.

I could select from cases under my care others, all showing that glucose disappeared more rapidly and more thoroughly under a skim-milk, than under any other diet, while the practices of my friends, and notably that of Dr. Weir Mitchell, furnish similar results, and I now recall a case in which I was associated with Dr. Mitchell, which has been under observation for at least three years, where the patient is essentially well while limiting himself to a skim-milk diet, but who invariably has a return of symptoms when this diet is departed from, even though it be substituted by an anti-diabetic diet. As I have said elsewhere, it is not always necessary to restrict diabetics to a skim-milk diet, but when other measures fail I resort to it with more confidence than in any other measure.

A third case shows strikingly the difference in the effects of a skim milk and unskimmed milk diet. An army officer, aged forty-three, came under my observation March 1, 1887. Two years earlier sugar had been discovered in his urine. When he came under my care he was living principally on skim milk, with a quart of Vichy daily, and passing about five quarts in the twenty-four hours, with a specific gravity of 1.024. The quantity of sugar was 2.09 per cent. He had, however, no thirst, or other symptoms of diabetes. I directed a continuance of the skim milk, and by April 15th the sugar had fallen to less than one-half per cent., while the specific gravity of the urine was but 1.013. He was ingesting six and a half quarts of skim milk, one quart of Vichy, and passing seven quarts of urine a day.

We then began to substitute unskimmed milk, and during the week terminating May 23d, he used nothing but unskimmed milk. The urine sent to me for examination, although having a specific gravity of 1.028, contained 3.4 per cent. of glucose. His tongue was coated, and he had a very unpleasant taste in his mouth. During the week ending June 9th the specific gravity ranged from 1.040 to 1.045, and although no analysis was made, the sugar had evidently increased. During the following week he went upon a selected anti-diabetic diet of eggs, stewed kidney, beefsteak, sliced tomatoes, cottage-cheese, stewed okra and celery, drinking at the same time two quarts daily of the solution of carbonate of lithium, and arseniate of sodium, and from three to

five pints of skimmed milk. The specific gravity fell to 1.022, but there was no analysis. This large ingestion of liquid was accompanied by a corresponding increase of urine, which did not, however, exceed six pints. At the end of the following week under the same general methods, except that no skim-milk was taken, a portion of the twenty-four hours' urine, forty-six and a half ounces, had a specific gravity of 1.030, and contained but two per cent. of sugar. In consequence of the combined treatment, it is impossible to say to what the improvement was directly due, but the patient himself was inclined to ascribe it to the lithium carbonate and sodium arseniate solutions. The case shows, however, the inferiority, if not the harmfulness, of unskimmed milk as compared with the skim-milk. It is difficult to explain why this should be the case, as it is well known that the digested fats do not pass through the liver, but through the lacteal system, and, therefore, on theoretical grounds the fat of unskimmed milk should not embarrass the liver, at least until it comes round to the liver again by the hepatic artery. It is, nevertheless, true, that unskimmed milk, so long as the disease continues, is a diet which fails to produce the results of skimmed. It has, however, happened to me that the use of unskimmed milk is attended by a reduction in the amount of urine and sugar contained therein, especially if it be gradually substituted for the unskimmed.

It is true that Dr. Flint in his sweeping declaration does not draw any line between the effect of skimmed and unskimmed milk, and it may be that his conclusions are based upon the use of unskimmed milk only. To me it is quite inexplicable how any one who has tried the skim-milk diet at all, should have come to a different conclusion from so many others, as well as myself.

Note.—Since the above was written the continued use of the lithium carbonate and sodium arseniate solution has satisfied me that it is fully as efficient as Clemens's solution of bromide of arsenic, although far from having the specific effect claimed by Martineau. It should be remembered, however, that Martineau says the remedy is especially useful in cases with a history of arthritic symptoms, "either articular or in the form of biliary or urinary lithiasis." I do not think attention has been called to this by others who have referred to this treatment.

THREE UNUSUAL CASES OF DIPHTHERIA.

By F. C. FERNALD, M.D.,
of Washington, D. C.

Case I. *Membrane extending from throat to external ear; use of trypsin; recovery.*—Male, aged six and a half years, white; has Pott's disease of two years duration, affecting mid-dorsal vertebræ; has had discharges from ears since early infancy, and for past nine months. Whenever the ears were syringed, some of the fluid passed into the throat and escaped from the nose, indicating perforation of both membranæ tympani, thus permitting the injected fluid to impinge directly upon the fenestræ of the inner ear, in consequence of which the intralabarynthine pressure became altered and the patient was made dizzy and nauseated, sometimes vomiting. The left ear had not been discharging for about four weeks.

March 3, 1887. Patient began to complain of slight sore throat, but was not seen by me until two days later, when examination of throat revealed a deposit of doubtful character on the right tonsil; it was easily removed with a mop, except a small piece, size of a large pinhead; the tonsils and fauces were neither reddened nor swollen to any noticeable extent, and there was but very little enlargement of the submaxillary glands; very slight fever; pulse good. He was not in bed, but was subdued and disinclined to play; directed him to be put to bed at once, and isolated.

4th. Considerably prostrated; membrane now covered about one-third of right tonsil, and a deposit was beginning on the left one.

6th. Membrane has entirely disappeared, but the mucous membrane of the fauces and pharynx was much congested, dark red in color; considerable swelling and some tenderness at the angle of the jaws and upper cervical glands on right side; complains of severe pain in right ear; last night had a smart hemorrhage from the right nostril; no coryza or hemorrhagic discharge from nose to-day; very weak.

Up to this time the treatment had been two grains of calomel every two hours till bowels became loose, then every four hours; stimulants were also given. Henceforth the calomel was discontinued, stimulants increased in quantity, and a poultice ordered over the ear and neck.

7th. Passed a sleepless night on account of paroxysms of excruciating pain, which he referred to the middle of his forehead; right ear now discharges muco-pus freely; right parotid gland swollen and tender; no longer any pain in swallowing; general condition good; poultice to be continued; discharge from ear to be removed with absorbent cotton, boracic acid insufflations; stimulants.

8th. Tragus swollen and tender, mastoid slightly so; pain in head still persists with unabated severity; *no membrane* to be seen in the external auditory canal; treatment continued with the addition of morphia to relieve pain, and syrup of phosphates of iron, quinine, and strychnine.

9th. Dr. C. W. Richardson made the visit with me. We found the external auditory canal filled with a diphtheritic deposit which extended into the concha of the ear, covering the inner surfaces of the tragus and antitragus, and partially filling the incisura intertragica; the external surface of the former not covered by membrane, but swollen, injected, and painful to the touch. The membrane could not be dislodged without force; any attempt to do so was painful and caused the subjacent skin to bleed. In accordance with Dr. Richardson's suggestions, I directed the ear to be thoroughly syringed with a weak solution of boracic acid every hour, after which the external auditory canal and the concha were to be filled with a solution of equal parts of water and liquor calcis; this solution was to remain in contact for five or ten minutes, then powdered boracic acid was to be insufflated in the ear; poulticing was discontinued.

10th. General condition not so good; membrane

has extended over the entire concha; swelling of parotid and neck much greater; treatment continued as before. A mixture containing *trypsin* was prescribed:

R.—Trypsin . . . . . gr. xxx.
Sodii bicarb. . . . . gr. x.
Aq. destillat. . . . . ʒj.
S. as directed.

I directed the trypsin to be used in place of lime-water solution as soon as it could be procured. The mother was told to syringe the ear every half hour, then to fill the external auditory canal with the trypsin mixture and to paint it over the concha.

11th (A.M.) Trypsin had not been used as directed; only one drop each time had been put into the canal, but had been painted on faithfully. However, the *membrane has entirely disappeared from the concha*, leaving an excoriated surface. The trypsin was now directed to be warmed (which I had inadvertently omitted previously) and to be applied every fifteen minutes, the ear being thoroughly syringed beforehand. The external auditory canal is still nearly filled with membrane; at no time since it has been present has any of the fluid passed into the throat, nor has any dizziness followed syringing. (P.M.) Since last visit, the trypsin mixture has gradually passed into the throat, as if it made a passage for itself through the diphtheritic deposit. The membrane is said to come away in small flakes when the ear is washed out; the deposit is thinning, and extends less far toward the meatus. The parotid is much less tender. I directed the trypsin to be applied every two hours and twice in the night.

12th. Membrane is disappearing very rapidly; swelling of parotid and neck greatly diminished. Trypsin every two hours.

13th. *No membrane to be seen;* the entire external auditory canal is excoriated and reddened; swelling of tragus and neighboring parts entirely gone. Trypsin discontinued.

For the past few days, patient has been unable to retain anything in the stomach, so that it was necessary to resort to nutrient enemata; a mixture of bismuth and creasote was given by the mouth.

16th. Stomach no longer irritable; is hungry; wants to be dressed and get up.

From this date his convalescence has been rapid and satisfactory; no paralysis has yet occurred.

Remarks.—The extension of diphtheritic membrane to the external ear is such a rare accident that most otologists do not even mention it in their books. Those who do speak of it—*e. g.*, Politzer, think that it is almost exclusively in scarlatinal-diphtheria that it is found. Doubtless in my patient, the chronically inflamed mucous membrane of the middle ear afforded a very fertile soil for the diphtheritic deposit, and the previous perforation of the membrana tympani allowed its extension without hindrance to the external ear, where the parts were already irritated from the long-continued discharges.

It is interesting to note that the deposit in the throat was not at all extensive, and that the involvement of the ears seems to be an extension of the membrane from the naso-pharynx, where a fresh deposit took place after that on the tonsils had disappeared. The epistaxis and the sudden and marked increase in the swelling of the cervical glands appear to me to indicate plainly the very moment that the naso-pharynx first became affected.

On account of the accessibility of the external ear, both to observation and to treatment, I had hoped to decide definitively the value of trypsin as a solvent of diphtheritic membranes.

But just how much was due to the trypsin, and how much to the mere macerating effect of the watery solution in which it was suspended, and also to the natural tendency of the membrane to exfoliate, is very uncertain.

This much, however, was observed, that while under the lime-water treatment, the membrane was evidently extending, yet very soon after the trypsin began to be used this tendency to spread was checked, and within twenty-four hours the thinnest part of the deposit, namely, that in the concha, had disappeared and within three days not a vestige of membrane was visible in the ear. Moreover, after the first few applications, the trypsin mixture opened a passage for itself through the obstructed external auditory canal into the throat. On the whole, I am inclined to regard trypsin with favor, and shall certainly try it again at the first opportunity.

Case II. *Diphtheria, paralysis of the diaphragm; death.*—Female, æt. six years, colored. Illness began Oct. 5, 1886; was first seen by me four days later, when patches of diphtheritic membrane were found on both tonsils, and on velum palati, with moderate enlargement of submaxillary glands. During the next few days the membrane continued to spread and to increase in thickness until on the 11th of Oct. it covered the whole of both tonsils, the pillars of fauces, the uvula, and the velum palati; the neck was enormously swollen. Eight days later the membrane had entirely disappeared, and the neck was of natural size. The voice, however, had been noticed to have a nasal intonation for a few days previously, and there was slight difficulty in swallowing, liquid coming back through the nose; during the entire attack there was but little fever; the prostration was excessive.

The treatment was tincture of chloride of iron and chlorate of potassium, and the following gargle:

R.—Liquor. sod. chlorinat. . . ʒiv.
Aquæ menth. pip. . . . ℥ss.
Glycerine . . . . . ad ʒiv.

This gargle was not distasteful to the patient, and controlled the fetor completely. Brandy was given freely. Oct. 21. Syrup of the phosphates of iron, quinine, and strychnine, and syrup of iodide of iron were substituted for all other medication. She improved slowly but progressively, and as I did not anticipate any further trouble, I ceased my visits on Nov. 2d.

About a week afterward I was summoned to see her again. She had been seized suddenly the night before with very high fever and vomiting. In the interval between my last visit and this time, paresis had developed in both legs, and in the muscles of the neck also, to such a degree that the head drooped forward upon the chest. She could

raise her head, however, but could not hold it erect for more than a few seconds; there was a good deal of trouble in deglutition, as the velum palati was now paralyzed completely. I prescribed a simple febrifuge. The next day found her about the same, except that the fever was much less. Prescribed $\frac{1}{24}$th grain of strychnine in suppository three times a day. On the following morning she was extremely weak, wholly unable to swallow, could not rid the pharynx of mucus, which was very abundant and tenacious; respirations were labored, but not accelerated; examination of lungs negative. Strychnine continued; nutrient enemata with brandy ordered. In the afternoon the embarrassment of respiration was greater; the breathing was almost entirely costal, the abdomen scarcely moving. Strychnine continued.

11th. (A. M.) Could swallow liquids more readily, but they caused coughing. (P. M.) Seems brighter and stronger; great quantity of mucus in pharynx. Administered $\frac{1}{32}$d grain strychnine hypodermatically.

12th. (A. M.) Passed a very restless night, but there were no toxic symptoms from the strychnine. Rids the pharynx of mucus with less trouble. (P. M.) General condition unchanged; almost no action of the diaphragm, as shown in the act of coughing, particularly. Strychnine suppositories continued.

13th. Lividity of nails and hands; respiration exceedingly labored; paralysis of diaphragm now complete, being shown by the fact that the epigastrium and the hypochondria were drawn inward during inspiration instead of being curved outward, as normally. Moreover, the protrusion produced in health by the descent of the diaphragm could not be felt. The lower ribs, during inspiration, were raised excessively and with a heaving motion. The cervical accessory respiratory muscles being already paralyzed could not be brought into action, hence there was but very little motion of the upper part of the thorax. Strychnine continued; mustard plasters applied to back of neck and to chest, and heat to extremities.

14th. (A. M.) Much to my surprise, could now swallow milk and brandy without the least trouble; otherwise her condition was the same. Gave $\frac{1}{16}$th grain strychnine, hypodermatically. (1 P. M.) Much worse; hypostatic congestion of lungs had now developed; mucus accumulating rapidly in trachea and bronchi. Gave $\frac{1}{16}$th grain of strychnine and four minims of tincture of digitalis and tincture of belladonna, hypodermatically. (8.45 P. M.) In my absence patient died very quietly, having become very cyanotic. There was no evidence that the strychnine had produced its toxic effect.

REMARKS.—Paralysis of the diaphragm is mentioned in our text-books as one of the rarest among the sequelæ of diphtheria, but when it does occur, the case, as a rule, terminates fatally. It seems very odd that this child should regain the ability to swallow so completely, and yet be so near to death. Whether the strychnine was of any service, or whether it did harm, it is impossible to say. At first I hesitated to employ it on account of the elevation of temperature, which, however, was never above 101.5° after I began to use it. The sufferings of the patient were dreadful to behold, and the utter inability to relieve them by any therapeutic measures was profoundly impressed upon me.

CASE III. *Diphtheria with extensive disturbance of sensation.*—Female, æt. ten years, colored. When I first saw her she was three weeks convalescent from a moderately severe attack of diphtheria. The only trouble she complained of at this time was great difficulty in walking (not so much from weakness, as from unsteadiness of gait), and slight difficulty in swallowing, fluids returning in part through the nose. I found that she was analgesic in legs and arms, but for lack of time deferred making a thorough examination until several days subsequent. Prescribed $\frac{1}{12}$th grain strychnine in solution, three times a day, and syrup of iodide of iron.

The following are my notes of what was discovered at the next visit: Nasal intonation of voice; paralysis of velum palati; gait ataxic, worse when the eyes were closed; inability to stand steady with the feet together and eyes closed; patellar reflex absent; some muscular weakness of legs, especially the right one, and of the right arm; complete loss of sense of smell as far as could be detected by spirits of camphor, cologne water, and kerosene; sense of taste absent over entire tongue; says she cannot taste salt, pepper, or strychnine, which I applied; hearing apparently normal; she has been very short-sighted for several years, but thinks she cannot see as well as formerly; no satisfactory test of sight could be made; complete analgesia was found over nearly the entire body, including the face and head, the exceptions being a circumscribed space in the palms of both hands, and in the soles of both feet, also along the sides of the spine in the dorsal region, but even in these parts the sensation of pain was much diminished. At any of the analgesic parts a pin could be thrust entirely through a fold of skin without the least pain to the patient. The mucous membrane of lips, mouth, and tongue, also, could be pricked as hard as possible, without producing the least pain. There was great diminution of the tactile sensibility. This was tested by means of a rough æsthesiometer in the shape of a pair of carpenter's dividers, with very sharp points. Nowhere could she detect that she was being touched with more than one of the points, even if they were four or five inches apart. She was also unable to distinguish heat from cold. For this test, two vials, one filled with hot water, the other with cold water, were used.

Several other physicians examined the patient subsequently, and found the same condition that I did, so that there was no deception; the girl was unusually intelligent, and very willing to submit to examination. There was no evidence of hysteria, either now or in the past.

The strychnine was continued in the same dose ($\frac{1}{12}$th grain) for several weeks without any upleasant effects, except for the first two or three days, during which there was slight stiffness of the jaws and neck, and a feeling of general uneasiness.

After one week of treatment she began to complain of the bitterness of the medicine; could taste

other things also, her gait was improved considerably. Two weeks later, could smell for the first time, and was able to swallow without difficulty. She continued to improve, and, in about six weeks from my first visit, all the abnormal conditions had disappeared, and she was perfectly well.

REMARKS.—It is not infrequent to find more or less disturbance of sensation preceding or accompanying diphtheritic paralysis, but usually confined to the paralyzed parts. I have not been able to find any case reported in which the disturbance of sensation was so great and so extensive, as in this patient. Such cases are, probably, quite rare, but I believe not so rare as one would at first suppose, for my patient was quite unaware of her condition, which would have escaped unnoticed without the very careful examination that was made.

USTILAGO MAYDIS.

A STUDY OF THE DRUG WITH REFERENCE TO ITS EMPLOYMENT AS AN OXYTOXIC.

BY W. A. N. DORLAND, M.D.,
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THE group of the Ustilagineæ, or smuts, of the natural order Fungi, as classified by Fischer de Waldheim, embraces a large number of species which are scattered throughout the various known countries of the globe, the United States laying claim to over twenty distinct varieties. Included in this number are some which have especially attracted the attention of scientists, and of these the ergot of corn, Ustilago maydis, has of late attained a prominent position.

Ustilago maydis, corn ergot, or corn smut, as it is variously known, is the parasitic fungus which is found infesting the young ears and tassels of the common maize or Indian corn. It appears as irregular swellings of a bright steel-gray color, which become darker as they increase in size, and as they mature are filled with a brown-black powder, the spores of the growth.

Strange as it may appear, this fungus, though inhabiting what may be called the American staple of food, and though known to botanists[1] for over a century, has never been thoroughly studied as to its chemical analysis and therapeutic properties, though from time to time, since its first introduction to scientific notice, it has received a limited degree of attention from pharmacists and physicists.

In one of the earliest papers on the subject, Mr. Crissler[2] reported as the result of his investigations in the analysis of the growth, the discovery of secalin, propylamin, and other minor constituents of the ergot of rye, and suggested that the drugs, being chemically similar, might be possessed of like therapeutic values. This invited investigation, and since then various reports and monographs on the drug have been published, especially within the last four or five years.[3]

It is not the object of the present article to discuss at large the results of the labors of the different investigators. After careful deliberation they have variously recommended its employment in the treatment of all maladies in which the use of ergot would be indicated. This paper, however, will be confined entirely to a consideration of the main therapeutic value of the drug, namely, as an oxytoxic.

The attention of the medical profession was first turned to this property of ustilago by the fact that pregnant cows fed on corn infested with this parasite, almost invariably threw off their young within a week's time. This created considerable interest as to whether a like effect would be produced in other cases, and bitches and other pregnant animals were treated to the drug, all promptly aborting. By reasoning from analogy, naturally the question arose as to whether the drug would not be valuable in parturient women when there was marked uterine inertia or persistent post-partum hemorrhage, the old stand-by, ergot, having frequently failed to perform its rôle in such cases. Certainly, all the indications seemed to tend in this direction.

Once suggested, it was not long before scientific practitioners tested the practicability of the logical conclusions which had been arrived at. In 1877, Estachy[2] records the successful employment of ustilago in a case of suspended labor pains, and in the same year Dr. C. Henry Leonard[3] reports similar cases, in which he had used the drug with marked success. These results have from time to time been confirmed by others, who have strongly advised the adoption of the drug as a substitute for ergot in like conditions.

During the past three months, May to August, while serving as resident obstetrician to the maternity wards of the Philadelphia Hospital, the writer enjoyed the opportunity of testing the efficiency of Ustilago maydis in those cases in which the parturient pain had either almost or entirely died away after complete dilatation of the os uteri had been accomplished—that is, during the second stage of labor. Through the kindness of his friend and colleague, Dr. M. J. Donohoe, he was also given the privilege of employing the drug in similar cases under his charge. The record was as follows:

CASE I.—Frances C., colored, age twenty-three, III-para, R. O. P. Labor began 7 P.M., May 3d. At 11 A.M., May 4th, the pains had considerably subsided, though the os was fully dilated and the occiput had descended in the parturient canal midway between the superior and inferior straits.

11.52. Pains feeble. Administered twenty minims ustilago.

12.12 P.M. Pains very powerful and effective. Rotation of the occiput now accomplished.

12.15. The membranes ruptured.

[1] Linnæus, Leonard, L. A. Planer, Ehrhart, Tozet, of Bordeaux, 1778, Noble Lemaire, 1853, Leveillé of the Société Philomatique of Paris, 1857, the Lausane brothers, 1874, and more recently Fischer de Waldheim, Woll, Winter, Pringsheim, and others.

[2] Charles Wm. Crissler, Inaug. Thesis, Amer. Journ. of Pharm., 1791.

[3] Dr. James Mitchell, Inaug. Thesis, Univ. of Pa., 1883; Dr. Robert A. Taylor, Inaug. Thesis, Jeff. Med. Coll., 1880, and others.

[2] National Dispensatory, Mitchell and Stillé, 3d edition.

[3] Am. Journ. of Pharm., 1877.

12 24. Delivered of a healthy male child, weight seven pounds.

CASE II.—Mary J., age thirty, II-para, L. O. A. Labor began 3 A.M.

9.05 A.M. Os fully dilated, head engaged. Pains weak and inefficient. Gave 15 minims ustilago.

9.30. Pains more severe. Membranes ruptured.

9.37. Pains weaker; gave 15 minims ustilago.

10.05. No increase in the force of the pains; gave 20 minims ustilago.

10.40. Still no noticeable effect; gave 30 minims ustilago.

11. Pains stronger, more frequent, clonic in character.

11.30. Delivered of healthy male child, weight 7⅞ pounds.

CASE III.—Eliza H., age eighteen, I-para, L. O. A. Labor began 4 A.M. Pains weak and inefficient from the first.

2.27 P.M. Os dilated, head engaged. Gave 20 minims ustilago.

2.50. Pains much stronger and increasing in force.

3.50. Delivered of healthy male child, weight 5¾ pounds.

CASE IV.—Sophia K., age forty, II-para, R. O. A. Labor began 9 A.M., May 13th. Continued at irregular intervals throughout the day and night.

9.05 A.M., May 14th. Pains every fifteen minutes, weak and without effect. Gave 3j ustilago.

9 25. Pains stronger and occurring every minute and a half.

9.56. Pains growing weaker. Gave 3j ustilago.

10.50. Still weak. Gave 3j ustilago.

11.10. Pains stronger, clonic in character.

11.20. Delivered of healthy female child, weight 5 pounds 15 ounces.

CASE V.—Anna W., colored, age thirty, I-para, R. O. A. Labor began 12 P.M., May 21st. Admitted to the wards 2 A.M., May 23d.

4 A.M. Pains entirely subsided. Gave 3j ustilago.

4.35. Slight pains. Gave 3j ustilago.

4.45. Pains increasing in severity.

5.12. Delivered of a healthy female child, weight 7½ pounds.

CASE VI.—Ada C., colored, age twenty-two, II-para, L. O. A. Labor began 8 P.M, May 31st. Pains continued throughout the night and morning of June 1st, when, the head being fully engaged, they gradually died away, ceasing during the afternoon.

11.31 P.M. Gave 3j ustilago.

12. Pains strong and natural. Head advancing.

12.30. Delivered of a healthy male child, weight 9¼ pounds.

CASE VII.—Mary H., age twenty, I-para, L. O. A. Labor began 8 P M., June 5th. Pains were strong and frequent during the dilatation of the os uteri, and continued throughout June 6th at irregular intervals. Complete dilatation accomplished at 4.30 P.M.

7 P.M. Head engaged. Pains becoming weaker.

9.10. Administered 3j ustilago.

9.30. Strong, efficient pains. Head advancing.

9.47. Delivered of a healthy female child, weight 8 pounds.

CASE. VIII.—Elizabeth T., age twenty, II-para, R. O. A. Labor began 11 P.M., June 13th.

6 A.M. Pains quite weak. Patient sleeping during the intervals.

7 A.M. Pains entirely suspended. Gave 3j ustilago.

7.35. No pains as yet. Gave 3j ustilago.

8. Slight pains, increasing in force.

9. Pains strong; head advancing.

9.25. Delivered of a healthy male child, weight 9½ pounds.

CASE IX.—Mary T., age twenty-three, II-para, L. O. A. Labor began 11 P.M., July 4th. Though the patient had a stout physique, the pains throughout were extremely feeble.

10 A.M. Head resting on the perineum. No pains for fifteen minutes.

10.25. Still no pains. Gave 3j ustilago.

10.50. No effect noticed. Gave 3j ustilago.

11.20. Has occasional weak pains. Vomited some, part of the ustilago in the ejecta.

11.45. Weak pains at long intervals.

11.54. One severe pain. Delivered of a healthy female child, weight 9 pounds.

The above comprises all of the cases within the three months in which it was deemed necessary to employ the drug to shorten the duration of labor. Before proceeding, it may be as well to state that the patients were all in good physical condition, that all were at term, and that all made a rapid and complete recovery.

Having, now, this record before us, let us endeavor by a careful examination of the cases, to group the results of our experiments, that we may the more clearly ascertain the value of the drug. Three or four points seem to stand out prominently, demanding our consideration.

1. *The toxicology and physiological action of the drug.*

No cases of poisoning in man by the drug are on record. That it is, however, possessed of toxic properties in large doses has been proved by Mitchell.[1] He found that in the lower animals, in large doses, it acted violently upon the spinal cord, paralyzing first the sensory, later the motor tracts, finally involving the motor and probably also the sensory nerves. Like ergot, then, it is probable that the chief force of the drug, in toxic doses, is expended upon the nerve centres, producing a toxic paralysis.

As may be understood, our studies on the physiological action of ustilago were necessarily limited. After the administration of the drug in three instances, notably in Case IX., there was considerable nausea, followed in the latter by vomiting of the ustilago, together with the other contents of the stomach. This nausea seems to be of a similar nature to that produced by the ergot of rye, and calls for no further discussion.

The action of ustilago upon the uterus has been more carefully noted. After the ingestion of a sufficient amount, in from twenty minutes to half an hour, the pains, if present, are increased in severity, in frequency, and in duration, presenting a marked *clonic* character, following each other in frequent

[1] Dr. James Mitchell, Inaug. Thesis, Univ. of Pa., 1883

succession, with a decided intermission between each. In this respect it differs decidedly from the action of ergot, which, in full doses, produces one continuous, *tonic* spasm of the uterine muscle. It is this property of ergot which has, when administered before the delivery of the placenta, produced in so many instances the irregular contractions of the uterus, of which the hour-glass is a well-known example. The employment of ustilago seems to be entirely free from such unpleasant complications.

In addition to being a valuable adjuvant in stimulating weak uterine contractions, ustilago seems to possess the property, which some years ago was ascribed to quinine, namely, of exciting uterine pains when entirely suspended— see Cases V., VIII., and IX.). This has been noticed by Leonard and others.

As to the time required for the action of the drug to become apparent, it may be said that it differs in different cases, depending, undoubtedly, upon the rapidity with which it is absorbed from the gastro-intestinal tract and carried into the system. In the above record, in only two instances (Cases VIII. and IX.) did it require over thirty-five minutes before the ustilago acted upon the uterine tissues, and in the latter case it will be remembered that most of the drug was ejected by emesis. In the remaining seven cases the average time required was twenty-five minutes.

The effect produced by ustilago upon the other unstriped muscular tissues of the body has not been inquired into. Probably it produces the same increase of intestinal peristalsis and the same rise in the arterial pressure due to vaso-motor spasm as is produced by ergot. This is yet open to investigation.

2. *The indications for the employment of the drug.*

It may be noticed that in all the above cases the ustilago was not administered until complete dilatation of the os had been accomplished. Whether or not a disastrous effect would be produced by the administration of the drug prior to the commencement of the second stage of labor cannot be stated. As yet, that question has not been decided. From the study of the physiological action of ustilago, we should think all danger of the irregular contractions of its compeer, the ergot of rye, would be precluded, and that if there were any possibilities of the exigencies of the case demanding its use, it might be employed with impunity during the first stage of labor. At present, however, we shall consider the first indication for its use to be the failure of the pains, with *complete dilatation of the os uteri.*

In none of the cases was the drug employed until the pains of labor had either become so weak that they were inefficient to accomplish the expulsion of the fœtus, or until they were entirely suspended. This, then, we consider the second indication for its use, namely, the *inefficiency or entire suspension of the parturient pain.*

After the ustilago had been taken, it may also be noticed that in no case was there the slightest tendency toward a post-partum hemorrhage. In each case, after the expulsion of the placenta, the uterus remained in a state of firm contraction. While, during the three months the great majority of the remaining cases, in which the customary ergot had been employed, showed no tendency whatever toward this alarming accident, however, in two instances was there such an occurrence demanding prompt attention. The third indication, then, for the employment of ustilago we shall consider to be *a condition of uterine inertia threatening or producing post-partum hemorrhage.*

3. *The dose and mode of administration.*

The preparation of ustilago employed in all reported cases, as well as in our own, was a good fluid extract. The dose of this varies from one-half to two drachms, one drachm being a fair average. This may be repeated at intervals as required. Should it be necessary, it may be used hypodermatically in doses of from five to fifteen minims.

Finally. *The advantages of ustilago over ergot.*

Dr. Frank H. Potter in a paper on the "Proper Use of Ergot in Obstetrical Practice,"[1] closes his article with a series of ten conclusions. In these he states that when administered during labor the action of ergot is uncertain, producing irregular contractions, rigidity of the os, with interference of the placental circulation, or too rapid expulsion of the fœtus, jeopardizing the maternal tissues. He also asserts that the life of the child is endangered through absorption of the oil of ergot, and that indirectly the drug may prove a cause of puerperal septicæmia by preventing the removal of every portion of the placenta and membranes. His last conclusion is as follows: "The proper use of ergot in obstetrical practice is limited to those cases in which, after the expulsion of the placenta, the uterus refuses to contract, or having once contracted, shows a tendency to secondary relaxation. Even in these cases reliance should not be placed upon it alone, but its action should be supplemented by the other means used to provoke uterine contraction."

When compared to this formidable array of objections the employment of ustilago seems much to be preferred to that of ergot. It does not produce irregular contractions with all the consequent complications and sequelæ; containing but two and a half per cent. of fixed oil, while ergot contains from twenty five per cent. to twenty-eight per cent., the dangers of absorption are reduced to a minimum; and, finally, as it can be procured at a cost of fifty per cent. less than that of ergot, it seems to be on a fair highway toward the supplanting of the latter in obstetrical practice, should the results of the investigations thus far be confirmed by subsequent researches.

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SPIRILLUM, FINKLER AND PRIOR, IN HEPATIZED LUNG-TISSUE.

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The invariable presence of a specific microbe, the so-called comma bacillus, in the intestinal tract of cholera patients was first demonstrated by Koch.

[1] Buffalo Med. and Surg. Journ., Sept. 1886, quoted in Therapeutic Gaz., Nov. 15, 1886.

The interest which after the publication of his investigations attached itself to forms resembling this comma bacillus led to the more careful study of two other microbes closely resembling this. One, found by Finkler and Prior in the stools of patients affected with cholera nostras, gave rise to much discussion at the time as to the real value and significance of Koch's discovery. Careful observation, however, of the growth of this second form in culture media showed well-marked and constant differences between it and Koch's comma-bacillus. Moreover, its presence in cholera nostras has been demonstrated in a few instances only, and it has been found by W. D. Miller in a tooth cavity and by another observer in the cæcum of a man who committed suicide.[1] A third form found by Deneke in cheese was likewise differentiated from Koch's comma-bacillus by means of cultivation, so that the latter still remains to be found in localities other than the intestines and dejecta of cholera patients.

Recently these comma-bacilli have been classed as spirilla. Although there may be some doubt as to the strict propriety of this nomenclature, it is certainly the best at our disposal, and in this paper they shall be so denominated.

Several months ago, in examining cultures from hepatized lung-tissue of a cow, the result of pleuro-pneumonia, I found in every one of twelve tubes several kinds of bacteria. Among others, a spirillum was present in almost every tube, the close resemblance of which to the spirillum of cholera and to the others mentioned above was of sufficient importance to warrant a more careful examination. Various media, including nutrient gelatine and agar-agar, blood serum and beef infusion had been inoculated by adding a minute bit of recently hepatized tissue (red hepatization) to each tube. The various microbes, chiefly bacilli, which had multiplied in the cultures after one or two days, had, very probably, found their way into the lung-tissue shortly before or after death and multiplied there. The heat was very great at the time and no special precautions had been taken by those removing the lungs from the body to keep foreign bacteria away. The source of the spirillum cannot, therefore, be inferred. It may have come from the ice which had been placed upon the lungs during transportation. After the rather laborious process of isolating it from several liquefying bacilli various culture media were inoculated in order to observe its mode of growth. Through the kindness of Dr. E. O. Shakespeare I was enabled to compare it with cultures of the three spirilla thus far discovered. By making cultures of all at the same time and exposing them to similar conditions of temperature, relative alkalinity, and concentration of culture media, accurate comparisons could be made.

The spirillum under consideration resembles the spirillum Finkler and Prior so closely that it may be regarded as a slightly modified variety of this microbe. For the sake of brevity it will be denominated spirillum β, the original spirillum of Finkler and Prior, spirillum α. The spirilla mentioned above have been very carefully described in many publications by writers on cholera, so that the reader will be spared any unnecessary repetitions.[1]

In tubes and on plates, spirillum β liquefies the commonly used 10 per cent. gelatine *much more rapidly* than spirillum α. At a temperature of 22° to 24° C. the plate containing colonies of the former was completely liquefied on the third day, that containing colonies of the latter only partially so. The colonies[2] of these two forms do not differ in any other way. Before liquefaction sets in, they present a homogeneous, circular disk with sharp, regular margin and a darker central nucleus which appears on the second day.

In tubes spirillum β liquefies the gelatine twice as rapidly as spirillum α during the first two or three days. Later on, both microbes seem to experience the same difficulty in the downward liquefaction of the gelatine, and after the first week they look alike.

On boiled potato spirillum α grew best at 20°–24° C. Spirillum β multiplied very slightly at this temperature. A feeble growth may appear at 35° C., which then resembles that of spirillum α in color and consistency. In general the latter grows far more vigorously on potato than the former.

In liquid media such as simple beef infusion, or beef infusion containing 1 per cent. peptone, both made slightly alkaline with sodium carbonate, the multiplication of this organism and of the other spirilla deserves some attention. The employment of liquid media as an accessory means of distinguishing them from one another, has not received any attention whatever, although it is of considerable value as the following shows: If the spirilla of Koch, Finkler, and Prior, and Deneke, be added to beef infusion and the tubes placed in a temperature of about 35° C. the following changes may be seen after twenty-four hours. The tube inoculated with Koch's spirillum will be clouded and the surface of the liquid covered with a delicate, but complete membrane. Beneath this the upper strata will be quite turbid from the very abundant massing of spirilla. The infusion inoculated with the Finkler and Prior spirillum is barely opalescent, without any trace of a surface membrane. The third tube inoc-

[1] Flügge: Die Mikroörganismen, 2d ed., p. 385.

[1] Very good descriptions will be found in Flügge (l. c.).

[2] In studying these it is very important not only to know the concentration of the gelatine employed, but to keep it in as uniform a temperature as possible, since both of these conditions have a marked influence upon the characters of the colony in its development. It is exceedingly difficult to realize a uniform, low temperature, both in summer and winter. In summer, the temperature in this climate is above the melting point of 10 per cent. gelatine for weeks and months. In winter a thermo-regulator usually fails within the narrow limit between the average temperature of the laboratory and that at which it is desirable to maintain the gelatine. A given per cent. of gelatine at a low temperature is equivalent to a larger per cent. at a higher temperature. The density, in other words, is increased when the temperature falls. We know, for instance, that the most important diagnostic feature of the cholera spirillum is the peculiar appearance of its colonies on the gelatine plates—a certain irregularity of outline combined with a marked refrangibility as of "particles of glass." The writer has, however, seen these very colonies present smooth, sharply outlined disks, differing from those of the other spirilla only in size. This loss of characteristic features was due to an abnormally low temperature at the time. A few days later, another plate growing in a higher temperature presented colonies of the usual type.

lated with the Deneke spirillum remains permanently clear. These differences have reappeared with each succeeding test, so that they may be regarded as constant; the same is true of beef infusion containing 1 per cent. peptone.

That the spirillum of Koch has a tendency to rise to the surface in culture media and there form a membrane, is not a new fact. It has been made use of by investigators Schottelius, Büchner, Gruber, in demonstrating the presence of this microbe in cholera stools. A minute portion of the latter is added to beef infusion and the whole allowed to stand in an open vessel in a warm place. After a few days, sometimes only after five or seven days (Gruber) the spirilla will be found on the surface. It must be borne in mind that by this process a number of bacteria are introduced into beef infusion at the same time with the spirilla, which may interfere more or less with the growth of the spirilla at the surface. That the three spirilla may be thus readily distinguished in pure beef-infusion cultures has not yet been suggested, so far as I know. It should not be lost sight of in endeavoring to identify the spirillum of Koch in cases of suspected Asiatic cholera.

The spirilla *a* and *3* entirely agree, so far as their growth in liquids is concerned. In a few cultures of *3*, a membrane has appeared, but only after standing undisturbed one or two weeks.

In milk kept at 22° C. there is for nearly two weeks no microscopic change. At the end of this time, however, spirilla *a* and *4* have caused precipitation of the casein. The precipitate contracts into a very firm mass at the bottom of the culture tube, and a layer of acid watery fluid, equal in bulk to about one-half the original volume of milk, rests above the coagulum. A parallel culture of the spirillum of Koch shows even at the end of three weeks no change. When placed at 35° C. the process of precipitation and settling sets in in four or five days with the spirilla *a* and *3*, while no change is observed in cultures of the spirillum of Koch after two weeks.

The microscopic examination of the various culture media reveals organisms not differing appreciably in size or form from the other comma-bacilli. It is, in fact, quite impossible to distinguish them by this means alone, especially when we bear in mind that all very slightly curved rods or spiral form according to the composition of the culture medium and the age of the culture. The short comma form always predominates. In older cultures, particularly in beef infusion, numerous perfect spirilla are found consisting of from one to very many complete revolutions of the spiral body. When dried on cover glasses and stained in an aqueous solution of fuchsin prepared from an alcoholic solution these longer spirals are, as a rule, resolved into commas, and the true spiral form is more or less obliterated. The comma forms are exceedingly active in their movements, even when the cultures are two or three weeks old. They dart to and fro with great rapidity, or revolve about one of their extremities as a fixed point. The spirilla whose movements are slower show very well the corkscrew-like revolution about their long axis as they move across the field.

This spirillum was destroyed by a ten minutes' exposure to 58–60° C. When taken from gelatine cultures and dried on sterile cover glasses, it was incapable of infecting beef infusion after four hours, indicating that in cultures four to five days old no resistant spore-state had been formed. No inoculation or feeding experiments were made upon animals.

The rather tedious and laborious work of identifying this microbe has led to the following results: A comma bacillus or spirillum not distinguishable from the spirillum of Koch under the microscope was found in hepatized lung-tissue. After isolation and cultivation in different media it resembled the spirillum Finkler and Prior very closely, and, was, therefore, easily distinguishable in this way from Koch's cholera spirillum. It differs from the former only in liquefying gelatine more rapidly and in growing more feebly upon boiled potatoes. The name, spirillum of Finkler and Prior *3*, is provisionally suggested.

The conclusion which was reached by Koch that the spirillum found by him is exclusively associated with Asiatic cholera is not modified but rather confirmed indirectly by these results. They throw no light, however, on the supposed relation between cholera nostras and the spirillum of Finkler and Prior.

CASE OF ACUTE ERGOTISM OCCURRING AFTER THE INGESTION OF A FLUIDOUNCE OF THE FLUID EXTRACT OF ERGOT.

BY LAURE HULME, M.D.,
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TAKING into consideration the widespread use of ergot, cases of acute poisoning from the drug are of very infrequent occurrence—in fact, almost unknown, and when met with are ascribed either to an idiosyncrasy on the part of the patient or to some impurity of the preparation.

On the other hand, epidemics of a peculiar nature, due undoubtedly to the continued ingestion of large quantities of ergotized breadstuffs have occurred in Europe and have been described by the various writers on the subject.

Single cases of chronic poisoning from the long-continued use of ergot, resulting in gangrene of the extremities, etc., are occasionally seen. In Caspar's *Vierteljahrschr. H.* Bd. xiv., S. 46, the following record of experiments with ergot is given:

"A quantity of bread which contained sixty grains of ergot, eaten at once, produced a burning sensation in the stomach and unconsciousness. These symptoms appeared after half an hour and continued in some people from 10 A.M., until 3.30 P.M. In another experiment, sixteen grains of ergot in bread were given at one time. This produced increased warmth in the region of the stomach, increased flow of saliva, nausea and headache. In the course of an hour all these symptoms disappeared. The action of large doses of ergot, mixed with bread and eaten for a length of time, depends, as found by experience, upon the constitution of the individual, the age, mode of life, etc. Ten grain doses can be taken for a considerable time."

The following case well illustrates the acute toxic effects of the drug in a mild form: Mrs. M., aged

forty-eight years, married twenty-eight years, two children, youngest fourteen years old, has suffered for several years from the presence of fibroid tumors of the uterus, causing menorrhagia. One of these tumors, being pedunculated, was removed two years ago by the ecraseur. One submucous nodule of about the size of a hickory-nut was allowed to remain. The patient recovered from the operation without any bad symptoms. The menorrhagia was lessened for several months, but again increased. She had had hot vaginal injections in connection with the remedies usual in such cases, with little benefit from any. On the second day of the menstrual period, the flow being excessive and proving more uncontrollable than usual, at 10 A.M. I administered one small teaspoonful of Squibb's fluid extract of ergot, and left the patient quite comfortable. On returning, less than forty minutes afterward, I found her in a half fainting condition. The countenance was swollen, pallid, and denoted great anxiety; the respirations were shallow and frequent; the extremities were swollen, and the hands increased about one-fourth in size. The abdomen was also much enlarged. Pulse was frequent, weak and irregular. The pupils were equally dilated and vision indistinct. She complained of great dizziness and nausea. The flow continued as before and no signs of uterine contraction were evident; she had no pain.

I administered whiskey f3j, and aromatic spirits of ammonia, gtt. x, every half hour, until at 2 P.M. she felt stronger and her pulse was normal in frequency (although very full and quick). The pupils were still widely dilated and vertigo prevented the patient from leaving the bed. The swelling of the face and extremities continued to increase until 7 P.M. In twenty-four hours the symptoms began to decrease and gradually subsided, the dizziness and indistinct vision being the last to disappear and lasting several days.

One of the most interesting points in this case was the absence of all evidence of uterine contraction, unless the nausea can be referred to this cause, as it is by Dr. Keating in a case mentioned in Ringer's *Therapeutics*, when the nausea attendant upon the administration of ergot in a case of fibroid tumors was much increased by the introduction of the finger into the os; and also in a case which came under my own observation where the introduction and dilatation of a sea-tangle tent caused little pain, but great and constant nausea and vomiting until the dilatation was complete, when all symptoms ceased entirely.

As to what to ascribe the deleterious effects of the drug in this case, I am at a loss to determine. The preparation was freshly procured from a reliable druggist, and has not caused any disagreeable symptoms in the patients to whom I have administered it since. The patient had frequently taken ergot on former occasions and in as large a dose.

In reference to the frequency of acute ergot poisoning, Dr. H. C. Wood remarks: "Although I have given the fluid extract in ounce doses, I have never seen it cause distinct symptoms. Fatal abortion has several times been produced; but I know of but two instances of decided poisoning in a non-pregnant person." (Wood's *Therapeutics*.) According to the U. S. Dispensatory, "But one fatal case of poisoning has occurred, except when abortion has been produced." In a case occurring in the practice of a medical friend, Squibb's fluid extract was given to arrest a persistent discharge of blood after an abortion, and although its use was kept up for over a week (ten ounces were given in nine days) there was no perceptible effect of any kind whatever that could be traced to the drug.

In an article in *Med. Times and Gaz.*, vol. ii., 1879, entitled "Acute Poisoning by Ergot, followed by Tolerance of the Drug," a very interesting account is given of a case under the care of Dr. Meadows, in which, after the removal of a fibro-cystic polyp from the anterior wall of the uterus, a half a drachm of powdered ergot was given to remove any shreds of growth which might remain; this did not only cause decided toxic effects, such as "marked depression, nausea, headache, swelling of the hands, etc.," but it set up powerful uterine contractions, which lasted for two hours, when upon vaginal examination there was found presenting a tumor the size of an orange. The same toxic effects in an exaggerated form followed the administration of the drug in the same dose a week later. About two weeks after this second administration of ergot it was again given; but three half-drachm doses at intervals of six hours produced only slight toxic effects and no evidence of uterine contraction. In this case there was a "weak dilated heart, with marked systolic murmur."

Dr. John M. Keating (*Medical Record*, 1880) reports a case of labor in which "there were placental adhesions of great firmness, and consequently more than the usual amount of hemorrhage," and in which there was given by the doctor before leaving, f3ij of the fluid ext. of ergot, and subsequently, through a misunderstanding on the part of the nurse, a drachm every half hour; the amount given altogether being half a fluid-ounce. In this case there were alarming symptoms of poisoning, which, however, yielded to prompt treatment addressed to stimulation of the circulation.

Dr. S. J. Radcliffe, in commenting upon Dr. Keating's report, says that he had reported a case in which he ordered a drachm of Squibb's fluid ext. of ergot every half hour, and the patient took in twelve hours one and a half ounces without injurious effect. Never having had a case of ergot poisoning in his own experience, he is rather of the opinion that the "placental adhesions of great firmness, and in consequence more than ordinary amount of hemorrhage," in Dr. Keating's case were prominent factors in producing the symptoms described.

Dr. M. F. Leary, of Gayloid, Kansas, writing to Dr. J. M. Keating, says (*Ibid.*, Dec. 4, 1880):

"Some two years ago I had about the same experience with ergot that you have described. The case was one of miscarriage in which half an ounce of Squibb's fluid ext. of ergot was given by error (one drachm every half hour), followed by symptoms much resembling those in your case. In my case, I am satisfied that there was neither hemorrhage, shock, nor idio-

syncope at work, but that it was purely a case of poisoning by ergot."

One of the most interesting cases of acute ergot poisoning on record is that reported by Dr. G. S. Oldright (*Canada Med. Journal*, 1870): in this case there were first symptoms of spasm of the arterioles and diminished heart action, dizziness, syncope, coldness of the surface, followed by reaction, shown by most intense congestion of face and head, which latter condition very slowly subsided.

A CASE OF PERICHONDRITIS OF THE CRICOID CARTILAGE.

BY LOUIS JURIST, M.D.,

LECTURER ON LARYNGOLOGY, JEFFERSON MEDICAL COLLEGE, FELLOW OF THE COLLEGE OF PHYSICIANS, PHILADELPHIA.

Mr. H., æt. thirty-seven, married, of good habits and good family history, was treated by my friend, Dr. De Young, for a mild attack of bronchitis, limited to the upper lobes, from Sept. 9 to Sept. 12, 1885, inclusive. He again presented himself on Sept. 19th, complaining of huskiness and some cough without expectoration. There was no dysphagia, no pain, no external swelling, but considerable fever. The following day he remained much the same; his cough, however, inducing vomiting. On the 21st improvement began, cough diminished, the voice cleared up, and on the 22d, after a friendly chat with his physician, he expressed desire to follow his usual clerical work. This he was cautioned not to do, but disregarded the admonition and left for his place of business the following morning. He remained at his books until evening, and on his way to take a street-car home, noticed dyspnœa marked enough to necessitate resting several times while walking a block. At 7.45 P.M., he was suddenly seized with a suffocative attack. Dr. De Young, living in the immediate neighborhood, was at once summoned, and finding his circulation good, and no cyanosis present, considered his symptoms due to spasm. Shortly after he appeared easier and expressed a wish to sleep.

Dr. De Young having hastily sent for me, we reached him at 9 P.M., and found that he had just ceased breathing. An immediate laryngotomy and artificial respiration failed to restore him.

Post-mortem fifteen hours later, limited to the thoracic cavity. Lungs crepitant and pale; the right bound down by old adhesions. Heart normal, pale, filled with fluid blood, and clots. Contrary to expectation, laryngeal œdema was conspicuous by its absence. The laryngeal surface of the epiglottis was crimson in spots; there was arborescent injection of both arytæno-epiglottidean folds. Both ventricular bands, bright red. Vocal bands, particularly the right, reddened and infiltrated. About one-third of an inch below the right vocal band, there was a gangrenous patch of mucous membrane about one-third of an inch in diameter; on the left side, at a point exactly corresponding to this, a very much smaller spot of gangrene was also noticeable. The trachea was slightly red in patches. On splitting the larynx from behind, which should not have been done, the knife slipped into an irregular cavity on the right side, from which about half a teaspoonful of thick pus exuded. This cavity extended under the gangrenous patch above mentioned, and showed a curious condition of the cricoid cartilage, and loss of perichondrium. There was also a well-marked plate of ossification. On the other side, a similar but much smaller cavity was found, by carefully following a minute opening in the gangrenous mucous membrane.

The incomplete post-mortem permitted, together with the absence of a more extended history of the patient, make the determination of the etiology, as well as the exact mode of death in this case, almost impossible. The condition of the larynx and the lungs excludes tuberculosis. Acute primary perichondritis, running a rapid course, or a late syphilitic infiltration of the cricoid perichondrium, seem to be the only explanation. In the absence of the patient's history, and an ante-mortem laryngoscopic examination, this point must remain undetermined. As there was no extrusion of any portion of the cartilage, nor an amount of pus sufficient to cause suffocation, death was apparently due to prolonged laryngeal spasm. The case is interesting not only from the pathological standpoint, but as illustrative of a possible, though rare form of sudden death.

839 N. Broad Street.

HOSPITAL NOTES.

PHILADELPHIA HOSPITAL.

Service of Barton C. Hirst, M.D.

TUBAL PREGNANCY; RUPTURE OF THE CYST DOWNWARD; FORMATION OF A RETROUTERINE, EXTRAPERITONEAL HÆMATOCELE; RECOVERY WITHOUT OPERATION.

(Reported by Richard C. Norris, M.D., Resident Physician.)

A. N. was brought in ambulance to hospital July 19th with the following history: Æt. thirty-eight years, II-para, youngest child five years of age. After two days of hard work as a washerwoman, she was attacked with sudden, cramp like pain in the hypogastrium, increasing in severity until she fainted. Partial recovery, with profuse sweating, great prostration and alarm were followed by two successive fainting spells and the discharge of blood from the vagina. This occurred six weeks subsequent to her last menstrual period.

Abdominal palpation disclosed a tumor in right iliac region. Vaginal examination showed an upward and forward displacement of the cervix behind the symphysis, with an elastic, fluctuating, and tender tumor occupying the posterior vaginal wall, and extending in the direction of the right broad ligament. The tumor became firmer and tense after two or three days. A close watch was kept for any discharged shreds of membrane, but none was found, and there was no history of any before coming to hospital. When admitted the temperature was 99°, and for sixteen days ranged between 98.5° and 100.5°, once rising to 102°, but quickly falling after being catheterized. The pain and tenderness largely disappeared three days after admission. On the twelfth day the tumor rose slightly above the pelvis, the pain and tenderness returned, lasted about one week and again disappeared, without subsequent recurrence.

The patient was allowed to get up two weeks after admission and was practically well, serving in the capacity of a ward assistant until September 12th, when she was granted a few hours liberty and did not return to the hospital.

At the last vaginal examination, made a few days before she left, the uterus had almost regained its normal position, the tumor was apparently solid and considerably contracted, although not to the extent expected from the length of time it was under observation.

MEDICAL PROGRESS.

Oil of Turpentine in Diphtheria.—Roese, of Hamburg, treated 58 cases with a mortality of 3 (5 per cent.), as follows: oil of turpentine was given in teaspoonful doses three times daily; it was mixed with spirits of ether in proportion of four minims of ether to the teaspoonful of oi of turpentine. In addition a tablespoonful of a 2 per cent. solution of sodium salicylate was given every two hours; externally an ice bag was used, and locally gargles of 1 per cent. warm solution of potassium chlorate. The results were.

1. Rapid diminution in pulse rate and temperature.
2. The subjective symptoms were rapidly alleviated.
3. The duration of the illness was shortened.
4. An exacerbation of the local process was not observed after the first dose of oil of turpentine.
5. Danger of suffocation occurred but once, when tracheotomy was done.

Roese considers pencilling the throat to be generally futile as done in private practice. He exercised great caution in pushing oil of turpentine in anæmic individuals and those having diseased hearts. Excessive heart action, from any cause, was carefully treated. The nourishment given was bouillon, old port wine and milk; to quench thirst ice and aërated fruit juices were used. As soon as the patient was free from fever turpentine was discontinued. In ordinary cases from 3 to 5 drachms sufficed; as much as 15 drachms were sometimes used. No intoxication was observed. Paralysis occurred once, and recovery followed the use of potassium iodide. — *Therapeutische Monatshefte*, October, 1887.

Antifebrin as a Disinfectant.—Dr. S. A. van Leer has been prosecuting a number of researches in the Hygienic Laboratory at Groningen on the antiseptic properties of antifebrin (acetanilide). When added to milk, so as to saturate it, acetanilide prevents it from turning sour; similarly, albumen can be kept from becoming putrid. It does not, however, seem a suitable substance for dressing wounds, as it does not easily dissolve or become moist, and irritates the surface of wounds. Dr. van Leer examined the effects of solutions of antifebrin of various strengths on several kinds of bacilli, and found that the development of many of them was not by this means prevented; consequently he does not think that the suggestion of Leube to employ antifebrin for surgical dressings is likely to prove of any advantage.—*Lancet*, October 15, 1887.

Saccharin.—In addition to the formula of Fischer (The Medical News, October 22, 1887, p. 480), the following are convenient modes of administering this substance:

Liqueurs may be sweetened with saccharin in the proportion 1 to 8000. A saccharin syrup may be made with

Saccharin	30 parts.
Carbonate of soda	11 "
Water	100 "

Saccharin and quinine may be given as follows:

Saccharin	1 part.
Carbonate of soda	1 "
Water	100 parts.

With this fluid mix thoroughly one part of sulphate of quinia, and drink at once.—*Therapeutische Monatshefte*, October, 1887.

Avulsion of Ingrowing Nails under Hypnotism.—Dr. S. L. Trivus, of St. Petersburg, relates a case in which he removed an ingrowing nail from the great toe of a cook after a hypnotic state had been induced in the patient. The operation lasted about twenty minutes. At first the woman occasionally moved her foot about, but when the author had suggested to her that no more pain was to be inflicted, and that the foot must be kept at rest, she sat quite quiet until the matrix of the toe was incised. At that point of the operation she shrieked out, and when questioned about the cause, stated that "a dog had just bitten her." After applying the dressing, Dr. Trivus woke her up, and asked her whether she would consent to the operation. She hesitated a little, and then said, "Yes, go on." On his pointing to her bandaged foot, however, she at once guessed that all was over already, and burst into laughter followed by hysterical sobs. No pain was felt until the next day, when she became somewhat lame. Dr. Trivus also relates an instructive case in which a man of twenty-five, after having been hypnotised for the sake of experiment and subsequently awakened, could not return to his normal state for several hours: when left alone, he was seized with a kind of hypnosis, and on his way home fell into a deep swoon in the street.—*British Medical Journal*, October 15, 1887.

The Effect of Iodoform Vapor upon the Cholera Germ.—Buchner, of Munich, has made a series of experiments to determine the effect of iodoform upon Koch's comma-bacillus. He found that when iodoform, in powder, was placed in tubes containing culture material infected with bacilli, there remained an upper zone where the bacilli did not develop. After several days the iodoform was removed, when the bacilli at once invaded the zone. It was evident that the bacilli were not destroyed, but that their action was inhibited. Pure iodine was substituted for iodoform, when no such inhibitory action resulted. Other volatile antiseptics, among them carbolic acid, were inert. Buchner considers the value of iodoform to consist in its power of penetrating, by its vapor, the deeper tissues, where it increases their resistance to bacteria, and inhibits bacterial growth. It is, then, an indirect antiseptic. We are, therefore, in therapeutics, not to rely upon the direct action of the drug. As a contrast,

Buchner uses tuberculin, whose effect upon the tissues is direct and intelligible.—*Münchener medicinische Wochenschrift*, No. 25, 1887.

THE CAUSE OF TYPHOID FEVER.—Investigations made by Brieger, Pasquet, and others, seem to have demonstrated that a ptomaine produced by the typhoid bacilli when injected into animals may cause a disease resembling typhoid fever. The ptomaine was discovered by Brieger, and named by him "typhotoxine." It is this substance, and not the germ directly, which is the cause of typhoid fever in man, according to the most recent theory. The *London Medical Record*, in commenting on these researches, draws the following conclusions from them: "1. The symptoms and alterations observed in animals in which cultures of typhoid bacilli had been injected are due to the toxic substances secreted by these bacilli. 2. The noxious germs, which secrete typhotoxine, are reproduced in the intestinal canal. From these the ptomaine is taken up by the circulation, and carried to all the organs liable to be affected by this poison. 3. It is most probable that the same takes place in abdominal typhoid fever of man. 4. A first infection induces immunity against the injurious effect of a later infection, even of large quantities of the toxic substance. 5. Further experiments and careful clinical investigations are necessary in order to establish a scientific support of the theory of immunity from infections of sterilized cultures containing not more than a determined quantity of typhotoxine. 6. In case this theory be an ascertained fact, the reproduction of the same immunity in man would be justified by commencing with very minute doses of typhotoxine, which would be gradually increased according to the results obtained."

A CHEMICAL TEST FOR THE CHOLERA BACILLUS.—BUJWID, in the *Zeitschrift für Hygiene*, describes a chemical test for the detection of the presence of the cholera bacillus. He adds to a bouillon-culture of the bacillus from five to ten per cent. of ordinary muriatic acid. In a few minutes a rose-violet color appears, which increases in intensity for half an hour. It remains unchanged for several days. This reaction occurs in bouillon-cultures ten to twelve hours old, and in gelatine-cultures after twenty-four hours. The coloring is increased by heat. It is claimed by Bujwid that this color is characteristic of the bacillus of Asiatic cholera, and distinguishes it from all others.

CLINICAL POINTS REGARDING ERYSIPELAS.—LINDÉN believes that there is no relation between the severity of an operation and the liability to erysipelas afterward. The number of patients and number of wounds under treatment have no bearing on the frequency of erysipelas. Meteorological conditions have no influence on the prevalence of erysipelas, excepting sudden changes in atmospheric pressure and temperature. The occurrence of erysipelas after operations is less dependent on the severity of the operation than on the infection of the wound with foul discharges.

The duration of erysipelas depends on its extent; it is least prolonged when upon the head and upper extremities, and most prolonged when on the lower extremities. Erysipelas endures longest in weak patients. Post-operation erysipelas is more prolonged than that occurring without an operation. Scar tissue and integument subject to irritation are more favorable to the spread of erysipelas than healthy integument. The first attack is generally most severe. After seven or eight months a recurrence is as severe as an original attack. Hypodermatic injections of alcohol and antiseptic dressings are the best treatment.—*Deutsche medicinische Wochenschrift*, October 13, 1887.

FORMULÆ FOR THE USE OF STROPHANTHUS.—ZERNER and LOEW have used tincture of strophanthus and Merck's strophanthine in Bamberger's wards in Vienna. They observed nausea and vomiting as occasional unpleasant after-effects. Their prescriptions were:

℞.—Tinct. strophanth. . . . ♏ 23 to 45.
Aquæ destill. . . . . ℥ss
Syrup simpl. . . . . ℥ss to ʒss.

The whole to be taken during twenty four hours. Subnitrate of bismuth was given when diarrhœa occurred. Also:

℞.—Strophanthin (Merck) . . gr. $\frac{1}{50}$ to $\frac{3}{50}$.
Aquæ destill. . . . . ℥ss
Syrup. simpl. . . . . ʒss.

For use during twenty-four hours.—*Gazette Médicale de Paris*, October 15, 1887.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY FINELY POWDERED BORAX.—FEROGLIO, of Cagliaro, has treated five cases of phthisis by inhalations of compressed air laden with finely powdered, carefully dried borax. When reported, the treatment had persisted but fifteen days. The effects were an improvement of all the symptoms presented by the cases.—*Centralblatt für die medicinischen Wissenschaften*, October 8, 1887.

TREATMENT OF GONORRHŒA IN WOMEN.—SINCLAIR, in the *Medical Chronicle* for October, 1887, advises the following method of treatment, which has been introduced by Schwarz, of Halle:

"First of all, the vulva and vagina are thoroughly cleansed from the adhering secretion by means of a 1 : 1000 sublimate solution, then with the help of a Simon's speculum, the vagina and vulva, including every fold and recess, are energetically swabbed with a pledget of cotton-wool soaked in a one per cent. solution of the sublimate, and rubbed with it for several minutes, so that the superficial layers of the epithelium containing the gonococci are removed. The Simon's speculum, or some other with separable blades (such as Bozeman's, etc.), is essential for the purpose in view; by this means it is possible to distend the folds of the vagina to their utmost extent, and to obtain a complete controlling view of the whole process, so as to avoid missing any of the diseased patches. Special care is taken with the introitus, which contains numerous folds.

"The next step is copiously to dust over the vagina and vulva with iodoform, which is still more effectively applied by rubbing it into the mucous membrane with the tip of the finger.

"To complete the process, the vagina is with moderate firmness packed full of iodoform gauze.

"If the treatment is very painful, a thing which depends upon the intensity of the disease process, and the idiosyncrasy of the patient, a narcotic or anæsthetic must be administered.

"The process is of value only when thoroughly carried out, but then it is certain to succeed.

"If, as is usual in rubbing the vagina, there occurs extensive capillary hemorrhage, it is only a favorable sign, inasmuch as it shows that at the bleeding points the diseased epithelial covering is for the most part removed, and, at the same time, a large number of the superficial, perhaps diseased, capillaries are destroyed.

"The iodoform gauze is permitted to remain for three or four days, and then the whole process is repeated with the same thoroughness, and over the same area.

"After four or five days more the gauze is finally removed, and then, for eight to fourteen days, the patient carries out a copious irrigation of the vagina with a sublimate solution of 1 in 2000."

This process was hardly ever known to fail. The vagina is red and raw after the second tampon has been removed, and there is usually a copious purulent discharge, "but the gonococci are annihilated, and have for ever vanished."

Acid Solutions of Sublimate as Disinfectants.—Laplace has made a study of the effects of acid solutions of corrosive sublimate as disinfectants, and concludes as follows from his work, which was done in Koch's laboratories, at Berlin: Sublimate, with tartaric acid in solution, can be recommended as a surgical disinfectant dressing for the following reasons:

By combining the action of tartaric acid, we obtain the full action of sublimate in fluids and surfaces containing albuminoids. Infected wounds should be irrigated from ten to twenty minutes daily; a single thorough cleansing is enough for fresh wounds, after which a dressing of tartaric acid-sublimate gauze is applied.

Tartaric-sublimate gauze does not interfere, in any degree, with iodoform and the other substances commonly used in surgery. It gives in the laboratory and in practice better results than sublimate alone. It does not irritate wounded tissues. Sublimate dissolves better in solution of tartaric acid than in water alone. The compound solution does not decompose in the tissues or dressings, and is cheap.

Solutions may be made after the following formulæ:

Corrosive sublimate . .	1 part.
Tartaric acid	5 parts.
Water	1000 "

for irrigation.

For the preparation of dressings:

Corrosive sublimate . .	5 parts.
Tartaric acid . . .	20 "
Distilled water . . .	1000 "

may be used, in which dressing material should soak two hours, after which it may be wrung out and dried.

Laplace's investigations consisted of experiments in Koch's laboratory, and in von Bergmann's and Fehleisen's clinics. He had previously demonstrated that the efficiency of sublimate and carbolic solutions as germicides is greatly increased by the addition of hydrochloric acid. — *Deutsche medicinische Wochenschrift*, October 6, 1887.

Tea-drinking and Pharyngitis Sicca. — Dr. Downie reports, in the *Practitioner* for October, 1887, that "Some three years ago I pointed out to students a form of dry pharyngitis occurring in badly fed, anæmic women, which I then in great part ascribed to the excessive use of cheap, and, therefore, inferior, tea. On inquiry it was found that those women had tea with almost every morsel of food of which they partook, and the tea, of a rank odor, was not simply infused, but literally *stewed*.

"For a time, in addition to proscribing the use of tea (recommending the substitution of cocoa or milk), I advised the liberal use of farinaceous food with milk, and prescribed a chalybeate tonic, under which the patients rapidly recovered. After a time I prescribed no medicine, directing the change of diet indicated alone, with the same beneficial results; but patients are never thoroughly satisfied unless they get a bottle, and as preparations of iron materially assist in the cure of the accompanying anæmia, I have returned to my former prescription. Those patients when asked if they use much tea confess to it freely, but add that since the throat became so dry they have quite lost taste for it—have 'turned against it.'

"Now in all such cases I look upon this form of dry pharyngitis, which does not involve the naso-pharynx as in *pharyngitis sicca*, as in great measure due to the gastric derangement—the dyspepsia—induced by the constant use of stewed tea shortly before, with, or immediately after meals, as well as to the local effect on the pharynx itself of this frequently-applied astringent and irritant lotion. And just as we forbid the use of tobacco in certain inflammatory conditions of the mouth and fauces, so the total abstinence from tea should in all cases be rigorously enjoined."

Tests for the Purity of Antifebrin.—Yvon has found the following tests reliable, in studying the properties of the drug in the laboratory of Dujardin-Beaumetz:

1. It should possess no odor.
2. It should be perfectly white.
3. Heated on a platinum foil, it should give a colorless liquid.
4. When thus heated, it should be entirely volatilized, leaving no residue.
5. It ought not to give with hypobromite of sodium an orange-yellow precipitate.

This last reaction, which is very delicate, is obtained whenever acetanilide retains any traces of free aniline. — *Therapeutic Gazette*, Oct. 15, 1887.

Antifebrin in the Feebile Diseases of Children.—Hidowitz is quoted as follows on this point by *The Archives of Pediatrics* for October, 1887.

The author reports the use of antifebrin in fifty-three cases, including four of scarlatina, eleven of measles, eleven of measles with subsequent pneumonia, two of measles with tuberculosis, two of facial erysipelas, four of croupous pneumonia, two of lobular pneumonia, two of pleuro-pneumonia, four of bronchitis, three of tuberculosis, four of follicular tonsillitis, three of gastricismus, one of acute intestinal catarrh. An interesting fact is that at the end of ten or twenty minutes after the medicine was taken the temperature began to decline, and con-

tinued steadily until it reached its lowest mark. After remaining at this point for a short time it began to rise again. The rapidity with which the temperature declined seemed to depend not so much upon the size of the dose as upon the peculiarity of the child and of the disease. Another observation was the very favorable effect upon the general condition of the children. Those who had previously been restless and fretful became quiet and soon fell asleep. In several instances the severe symptoms connected with collapse were quickly relieved after the ingestion of the medicine. Scarlatina and erysipelas were more rebellious to the antipyretic action of the drug than any of the other diseases in which it was used, the temperature falling only a few tenths of a degree. In pneumonia occurring as a complication of measles, in croupous and lobular pneumonia, in measles complicated with tuberculous affections of the stomach and intestines, the antipyretic action of the drug was prompt and energetic. The pulse became fuller, its frequency being diminished, though not always in proportion to the decline of the temperature, the respiration became deeper and more quiet. The drug was given in the form of powder, and in doses of 1½ grains to children three or four years of age. To older children, 3 or 4½ or even 7½ grains were given. Small doses usually sufficed for poorly nourished children, the reaction being much more energetic than in more robust children. As much as 30 grains were given in the course of a day. The antifebrin never produced any perceptible effect upon the duration of the disease. In some cases of croupous pneumonia its use was accompanied by profuse perspiration, with cyanosis of the face and the ends of the fingers.

FORMULÆ FOR PURGATIVE MIXTURES.—In obstinate constipation:

Ol. ricini	ʒ ss–i.
Syrup. rhei.	ʒ ss.
Alcohol.	ʒ ss.
Essent. menth. piper.	gtt. ii.

In one dose or two as needed.

As podophyllin is insoluble in water, a chemist has prepared a "liquor of podophyllin," containing one-sixtieth of a grain to fifty minims. This may be prescribed as follows:

Liquor of podophyllin	ʒ ss to 3.
Decoction of aloes	ʒ ss.
Tincture of capsicum	gtt. 5.

An agreeable purgative powder or mass results from the combination of the following ingredients:

Rad. jalap. pulv.	1 part.
Sennæ fol. pulv.	1 "
Sacchar. albæ.	1 "
Tamarind. pulp.	6 parts.

which may be partially dried and made into chocolate-covered tablets.—*Revue de Therapeutique*, October 1, 1887.

STAB-WOUND OF ABDOMEN AND COLIC ARTERY; RECOVERY.—DR. JENKINS, of Henderson, Kentucky, reports the following case in the *Annals of Surgery* for October, 1887:

There was a cut in the meso-colon, involving about two-thirds of its thickness, situated about midway between its fixed border and the transverse colon. The cut was about three centimetres long, transverse in direction, and evidently made by the point of the knife. The clot being rubbed out of the cut, it began bleeding in a weak diffused jet. The bleeding vessels had retracted into the tissues of the mesocolon and could not be caught by forceps until the peritoneum on the superior surface was scissored up. The severed arteries were the main right branch of the arteria colica media and a branch thereof. Ligated proximal and distal ends with sublimatized catgut. Iodoformed wound. This part of the operation was most difficult, owing to the poor flickering light; several candle-moths also fell upon the peritoneal field of operation. Digital exploration of the wound in the wall of the belly was made beneath the guts. It was found to be transverse in direction, a little to the right from middle of the epigastric region, about five centimetres long, slanting inward to the right, the right rectus abdominis entirely severed, the circumference of the wound tightly strangulating the expressed bowel (thus probably preventing lethal hemorrhage from the arteria colica media). Systematic reduction was attempted in narcosis but failed. The wound was then enlarged by an incision extending from its inner angle to the umbilicus, after which restitution was effected. The peritoneum of the extrusion had become glazed and opaque from the long action of the carbolic acid. The various peritoneal apartments were sought out, particularly Douglas's sac and the recessus duodeno-jejunalis, and wiped with sublimate gauze; only light blood staining, serum seemed in excess. Air expressed, wound closed with eight deep silk sutures, snowed external wound under with iodoform, sublimate gauze dressing. The only bad symptoms that followed were decided intestinal tympany on third day with slight abdominal pain (no morphia used). His temperature on that day registered the highest—101°. He left hospital apparently well.

A NON-IRRITANT ANTISEPTIC LIQUID.—LÉPINE, who has studied the combination of various antiseptic substances, has found the following an efficient and non-irritant compound:

Corrosive sublimate	gr. $\frac{1}{10}$.
Carbolic acid	gr. 1½.
Salicylic acid	gr. 1½.
Benzoic acid	gr. ¾.
Chloride of lime	gr. ¾.
Bromine	gr. $\frac{1}{6}$.
Hydrobromate of quinia	gr. 3.
Water	ʒ 25.

This fluid may be used by parenchymatous injection or in dressing wounds.—*Journal de Médecine*, October 9, 1887.

RAPID ANÆSTHESIA.—DR. CORNING has used the following device, which he describes in the *New York Medical Journal* of October 22, 1887, as follows:

A strong, flat elastic tourniquet was secured around each of the patient's thighs, so as to arrest both the arterial and venous blood-flow in the same. By this procedure each limb was converted into a species of receptaculum for a considerable proportion of the total blood-mass, or, as a distinguished friend of mine who

was present put it, "about one-third of the man was cut off," and consequently it was only necessary to saturate the remaining two-thirds (of the total blood-mass). The ligatures being in place, the ether cone was applied over the mouth and face of the patient, and in about three minutes by the watch the patient was anæsthetized. On the completion of the operation, the ligatures were removed and the patient recovered from the effects of the ether instantly. This rapid recovery from the effects of the anæsthetic created considerable comment from the medical gentlemen present, and was certainly a very interesting phenomenon from whatever physiological standpoint one chooses to view it.

The Life of the Teeth Independent of the Roots.—Rose, in a recent work published by Hirschfeld, of Leipzig, concludes, from the study of necrosis of the jaws, that teeth can continue to live after their roots have been entirely destroyed by resection of the bone, if the alveolar membrane and teeth are allowed to remain *in situ*.—*Deutsche medicinische Wochenschrift*, October 6, 1887.

Creolin versus Carbolic Acid.—Dr. E. von Esmarch, assistant in the Royal Hygienic Institute of Berlin, has made a series of experiments with creolin, a new disinfectant, which has been highly spoken of by Professor Fröhner, of the new Veterinary School of Berlin. Dr. von Esmarch made a number of comparative observations with carbolic acid on the disinfecting, deodorising, and antiseptic properties of creolin. Amongst other observations, he noted the effects of the two substances on fluids containing cholera, typhus, and anthrax bacilli. As a rule, creolin appeared to be much the more active. Similarly the offensive smell of various putrefying liquids was controlled much more readily by creolin than by carbolic acid. Creolin soap, too, showed itself more active as a disinfectant than corrosive sublimate soap.—*Lancet*, October 15, 1887.

Useful Applications for "Toothache."—The following may be inserted into a carious tooth:

Camphor,	
Chloral	ää 5 parts.
Cocain. hydrochlorat.	1 part.

An oily liquid results from the mixture.

Experience with cocaine has shown that in many cases it irritates the nerve to which it is applied, and that oil of cloves is more efficient.

Beginning superficial periostitis of the jaws may be promptly checked and the pain cured by painting with tincture of aconite and tincture of iodine, equal parts: the application should be entrusted to a physician only. —*Revue de Thérapeutique*, October 1, 1887.

The Histology of Reunited Intestines.—Bishop concludes, from micro-photographs of sections made of intestines after suture:

First, that there are three distinct stages in the process of intestinal union, namely, primary, or peritoneal union; secondary, or the stage of contraction; and tertiary, or cellulo-fibrous union. Secondly, that each is complemental to the others, and that the process cannot be considered complete until the whole three have been passed through. Thirdly, that in considering the action of sutures upon the wall of the intestine, and in forming any judgment as to the best method of using them, regard should be had to each and all of these three stages.—*Medical Chronicle*, October, 1887.

Treatment of Diphtheria by Oxygenated Water.—Hofmokl has used the following in diphtheria, by the gastro-intestinal tract or locally:

Oxygenated water (2 per cent. solution)	℥ 50.
Glycerine	ℏ 45.

A teaspoonful may be given every one or two hours.

This may be given by inhalation. The effects of the medicine are an abundant salivation: the false membranes have in some cases been rejected in three or four days, and in others in six or nine days.

The medicine is a tonic against anorexia.—*Journal de Medecine*, October 9, 1887.

Salol.—Bielschorvski, of Breslau, treated 27 cases of rheumatism with salol, of whom 19 were promptly cured; 2 resisted salol and yielded to salicylic acid; the remainder became chronic. Relapses occurred eight times, but yielded to salol. The drug was given in capsules, in doses ranging from 30 grains to 2 drachms in five hours. The smallest quantity which effected a cure was 3¼ drachms; the greatest quantity taken was 11 drachms. The disease was generally checked in three days; 1 case resisted treatment for ten days. In 4 cases mild affection of the heart were present, which disappeared. The urine showed the presence of carbolic acid, and gave a violet color with ferric chloride.

Rosenberg, of Berlin, was not so successful. After the use of 90 grains to 2 drachms in twenty-four hours, a prompt effect was produced, but complications were frequent. One case resisted salol, but yielded to sodium salicylate promptly. Rosenberg also observed all the unpleasant effects caused by salicylates after the use of salol. The smallest dose which produced an effect was 1 drachm, given during twenty-four hours. Rosenberg considers salol a "masked salicylic acid."

Feilchenfeld, of Berlin, obtained good results from 30 to 45 grains of salol daily, in cystitis and pyelitis, in acute cases, and also in hypertrophied prostate. Strangury followed the use of the drug in one case; in the others no ill effects were observed.—*Centralblatt für klinische Medicin*, October 15, 1887.

Five Years of Gastric Surgery.—Maydl reports forty gastrostomies in five years in Albert's clinic in Vienna. There were thirty operations for carcinoma of the œsophagus, and ten for other œsophagea stenoses. Twenty-one patients recovered. Mortality fifty-seven per cent. Patients suffering from carcinoma perished sooner or later. Three patients were permanently cured of stenoses from other causes. In these cases the stricture was dilated by passing bougies from the mouth and emerging in the wound. Maydl considers gastrostomy a much more valuable operation for stricture of the œsophagus than œsophagotomy. He would perform it, if occasion offered, for recent injuries to the œsophagus. Two resections of the pylorus were performed; one patient recovered, and one died of peritonitis.—*Internationale klinische Rundschau*, Nos. 3–22, 1887.

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A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 5, 1887.

THE CONTROL OF QUARANTINE.

Recognizing the paramount importance of preventing the importation of cholera into the United States, we published on Oct. 29th, in an extra issue of THE NEWS the Report of the Committee of the College of Physicians of Philadelphia to investigate the efficiency of our quarantine arrangements for the exclusion of cholera and other epidemic diseases. The report contains an exhaustive relation of the state of affairs existing at the ports of New York, Philadelphia, and Baltimore. It discloses many startling facts which cannot be regarded as less than highly disquieting, and which will doubtless even excite alarm in the minds of some, and we are forced to admit that it will not be entirely groundless. As the testimony of thoroughly competent and independent observers, a committee of one of the most conservative and respected medical bodies in America, it carries with it the weight of conviction, and conclusively proves the urgent necessity of a radical reform in our method of guarding the country against devastating epidemics with which we are, through foreign communications, from time to time threatened.

The quarantine establishments at Philadelphia and Baltimore are entirely unprepared and insufficient to prevent the spread of cholera, should either of them have the misfortune to be called upon to deal with a large number of immigrants with this disease among them, or its germs infecting their baggage. In the language of the report "there is no reason to believe, from the published official descriptions, that the conditions of the other ports of entry upon our Atlantic and Gulf coasts are in any respect superior," and indeed the same may, with equal justice, be said of the various ports along the lakes, through which thousands of immigrants annually reach the West, by way of Quebec and Montreal.

This country has been exposed to the introduction of cholera into one or more of her ports for the last four years. From the Mediterranean, from both coasts of South America, and from the eastern coast of Asia, this scourge might at any time during this period have been spread among us by the arrival of immigrants and baggage from infected places. Yet with all this warning and time for ample preparation, we find ourselves at last surprised by an attack which, because of its very tardiness, seems to have been entirely unexpected. The suspicious continuance of the disease among the immigrants, so long after their arrival and detention at the New York quarantine station, prompts an investigation, and a state of defences at New York, Philadelphia, and Baltimore is revealed, which, even if local interests alone were involved, can be characterized as nothing else than deplorable. Should, however, the germs of cholera finally escape or be permitted to pass beyond quarantine, they may not limit their onslaught to the nearest city, but may spread over the land and ultimately carry sorrow and loss to homes hundreds and even thousands of miles distant from the port where they entered.

The case of the "Independente" well illustrates how this may happen. A few days after their arrival and detention at New York for twenty-six hours, immigrants brought by this steamship from infected ports in Italy and Sicily reach Philadelphia, Baltimore, Syracuse, Chicago, and pass through St. Louis *en route* for Colorado, without any warning whatever from the quarantine officer of the port of entry. If they were not themselves affected with cholera, they carried with them baggage which had certainly been packed in infected districts, possibly in houses where cholera had raged. It has been stated that at least some of this baggage was not disinfected at New York, and it is safe, in consideration of all the circumstances, to affirm that none of it was effectually disinfected, even if the attempt had been made during the detention of twenty-six hours, inasmuch as neither the baggage nor the immigrants were, removed from the ship until all were landed at Castle Garden.

The chief value of the work of the Committee will be improperly appreciated by those who are most interested, namely, the public at large, if it does not lead to an earnest effort to bring about an immediate and satisfactory improvement in the provision and proper administration of the means of protecting the health of the country. The abuses and the faults of an exclusively local quarantine, such as at present exists, are so natural and intrinsic

that we should by this time acknowledge the absolute need of a national protection of the general welfare by a national maintenance and administration of quarantine.

ACETPHENETIDINE.

In the *Centralblatt für die medicinische Wissenschaften*, No. 9, p. 145, 1887, Kast and Hinsberg call attention to the antipyretic influence of this compound, which is chemically very closely allied to antifebrin. In appearance it is of a reddish-black color, insipid, odorless, and sparingly soluble in water and glycerine, very soluble in warm alcohol, but insoluble in acid and alkaline liquids, especially in the gastric and pancreatic juices.

When 45 to 75 grains of the drug were administered to a dog it produced rapid respiratory movements, somnolence, and vomiting, with uncertainty in walking. These symptoms continued for three hours and were accompanied by a cyanosis of the buccal mucous membrane. The blood was also darker in hue than normal, due to the presence of methæmoglobin. In the course of a few hours more, however, these signs passed away and complete recovery took place.

Reasoning from these experiments that the drug was only capable of producing harmful results when given in very large doses, these observers turned to the bedside for the clinical information which was the ultimate object of their research, and found that in cases of phthisis from 3 to 7½ grains decreased the bodily temperature two degrees without much effect upon the pulse, but with a moderate amount of perspiration. There was no disturbance of the appetite, no nausea, and no vomiting. These writers, therefore, believe the drug worthy of further trial and the attention of the profession.

Still other tests as to its value have been made by Kohler, of Vienna, assistant to Bamberger, the records of which may be found in the *Wiener med. Wochenschrift*, Nos. 26 and 27, 1887. This observer used the drug in fifty cases of different diseases associated with fever, consisting of pulmonary phthisis (11 cases), croupous pneumonia (10 cases), typhoid fever (7 cases), and in puerperal septicæmia, pleurisy, pyæmia, and cerebro-spinal meningitis. The doses ranged from 3 to 7½ grains according to the age and susceptibility of the patient. He believes that its innocuousness is established, and he would not hesitate in pushing it strongly if need demanded it. Kohler also failed to discover any disagreeable effects produced by its ingestion, but evidently found more profuse sweating after its use than did Kast and Hinsberg.

The drug is eliminated by the kidneys, and changes the color of the urine to a dark-yellow hue, which becomes red on the addition of the perchloride of iron; and care must be exercised that the copper test be not used in testing for sugar, since the urine after the ingestion of acetphenetidine reduces a copper solution very strongly.

ON THE INCIDENCE OF ALBUMINURIA AMONG THE SICK.

We have still much to learn about the condition under which albuminuria occurs, and the significance of this extremely common symptom. In the *British Medical Journal* of October 15th, there is a valuable contribution to the question by Grainger Stewart, who has investigated the incidence of albuminuria among the sick of all classes, with the following results: In 150 private patients, 36 showed albumen, of whom only 13 had Bright's disease. Of 150 indoor patients, in 74 the urine contained albumen, and of these 26 had Bright's disease. Of 100 outdoor patients, 19 responded to the tests, of whom 8 had Bright's disease. Of 50 cases in the Children's Hospital, 7 had albumen, only 1 of whom had morbus Brightii; of 50 cases in the Fever Hospital, 33 showed albumen; of 25 patients in the Maternity Hospital, the urine of 18 contained albumen. In 40 cases of alcoholism, acute and chronic, 19 were albuminuric.

Albuminuria is certainly more common in disease than is usually supposed. Some of the inferences drawn by the author from the facts stated are that Bright's disease does not account for one-half of the cases of albuminuria met with in practice; but it accounts for more than any other individual cause. The changes in the renal circulation due to cardiac and other maladies, and accidental cases due to admixture of blood and pus in the urine, rank next in order. Dietetic, cyclic, and simple persistent albuminurias are rare. The albuminuria of Bright's disease is more abundant than in that due to other causes, though at first in the waxy and cirrhotic forms it may be so slight in amount as to be shown only by picric acid, by which reagent alone in some of the digestive and nervous cases, and in those due to high temperature the slight amount of albumen may be detected.

Professor Stewart makes no attempt to explain the albuminuria of the various conditions, but is content, for the present, with the statements above noted, which, it is hoped, may direct anew the attention of practitioners to the important fact that the presence of albumen in the urine does not necessarily mean the existence of Bright's disease.

THE EXPOSURE OF THE STENOCARPINE FRAUD.

For the last month or six weeks there has been a growing suspicion that gleditschine or stenocarpine was not what it purported to be, and that a gross fraud was being perpetrated on the profession, which

is always alert to try a new drug without, perhaps, question as to its source or previous history.

In The Medical News of last week Dr. Marshall, of the University of Pennsylvania, published the results of a careful investigation, carried out by him, on the solution sold in the shops as stenocarpine, in which he found a large amount of cocaine, and a smaller quantity of atropine, or an alkaloid of the same group, there being no distinctive tests between it, duboisine, and daturine. Articles also appear in the *Pharmaceutische Rundschau* for November by Nooy, of Ann Arbor, and in *The Medical Age* of the 25th ult., by Thompson, in which results identical with those of Marshall were reached. One of the New York firms which have been selling the substance has, too, within the last week published a disclaimer in which it pleads ignorance of the source of the alleged drug, and states that it has merely acted as agents of the manufacturers.

Moreover, it has been shown that the Gleditschia triacanthus possesses in none of its parts an alkaloid capable of allaying the functional activity of sensory nerves. The fraud does not stop here, however, for the solution is labelled as being of the strength of two per cent., while analysis proves the presence of over seven per cent. of solid matter, of which six per cent. or more is cocaine. This so-called two per cent. solution is retailed to physicians at one dollar and twenty-five cents a fluid drachm, and its ready sale has, therefore, netted a handsome profit to its manufacturers.

An esteemed New York contemporary three months since, first called the attention of the profession to the remarkable properties of this alleged new anæsthetic, and but a month ago, with its accustomed enterprise, laid before its readers an elaborate botanical description of the tree from which it was obtained, with beautiful illustrations of its leaves and branches to aid in its identification. Unfortunately, however, this has only tended to increase the harvest of those who, in duping our contemporary, have sought to impose this fraud on the profession.

In this connection we cannot but express the hope that in the future greater discrimination will be exercised by our journals as to the reliability of the statements to which they give currency, in order that they may protect their readers from, rather than expose them to grossly fraudulent imposition.

There are other features about this subject, which are of even greater importance than the mere discovery of the imposition, and are far from agreeable to the medical man who prides himself on the mental power and scientific conservatism of his profession. Lessons taught by such incidents as these, generally make their influence felt for a considerable length of time, and we hope that this one will, at least, teach physicians to look with distrust on any new drug, the history of which is shrouded in mystery.

Words cannot condemn with sufficient force the persons who have knowingly and deliberately carried out, with all its nicety of detail, this scheme. We do not know on whom the blame may be justly placed, but we do know that the momentary influx of dollars will never repay the men who have perpetrated the fraud.

Prof. Heneage Gibbes, of London, has been appointed to the Chair of Pathology in the University of Michigan. It is understood that Dr. Gibbes will accept the position, and will begin his work in February. With Dr. Klein, Dr. Gibbes constituted the English Cholera Commission to India, in 1884. Koch pronounces him one of the foremost of English bacteriologists.

The Medical Faculty of the University of Michigan have been so much gratified by the attendance upon the three years' courses of nine months each, that they have unanimously petitioned the Board of Regents to establish an optional fourth year course, which shall be given in Detroit, and shall consist wholly of clinical specialties.

The new laboratories of histology and physiology are now being occupied, while the hygienic laboratory is in process of erection. But the Department of Hygiene has been established, and for the present year the work will be done in rooms in the chemical laboratory. Dr. Vaughan has been relieved of his work in Materia Medica, and has been made Professor of Hygiene and Director of the Laboratory. Mr. F. G. Nooy has been appointed Instructor in Hygiene. Dr. Conrad George has been appointed to the Chair of Materia Medica. The new laboratory of hygiene will not be ready for occupation before October, 1888. It will contain rooms for chemical analysis of foods, water and gas analysis, bacteriological work, a disinfecting chamber, and a cold room.

On Sunday, October 23d, Dr. John G. Jay, Professor of Anatomy and Operative Surgery in the Woman's Medical College of Baltimore, performed the Cæsarean section upon a negro woman, aged twenty-seven years. The woman was not a dwarf, but was of good external development; internal examination, however, revealed an infantile pelvis, with a great narrowing of all the pelvic diameters. The antero-posterior diameter of the superior strait was estimated to be from one and three-quarters to two inches; hence it was deemed proper to perform the section rather than craniotomy. The operation was

done according to the method of Sänger, with three rows of sutures for the uterine wound, and a resection of the muscularis of the uterus. The child was born alive, but soon died. The mother is now in the seventh day, has had almost no fever, not much pain, no unusual lochia, and seems to be on the high road to recovery. The further report of this case will be awaited with interest.

The medical men of British Columbia have obtained an act of Legislature of that Province requiring that every physician who wishes to practise there, shall pass an examination before the Provincial Medical Board. So, now, three of the provinces, Ontario, British Columbia, and Quebec, have raised around them a Chinese wall of protection, for the liberal profession of medicine. There is to be no reciprocity.

John Murray Carnochan, M.D., died in New York, October 28th, aged seventy years. His death by apoplexy was very sudden, he had been in his usual good health two hours previously. He was a native of Savannah, Ga. His predilections for surgery were early marked, and were fastened for life by his entering the office of Dr. Valentine Mott as a medical student. In 1847 he began practice in New York, and three years later was appointed surgeon-in-chief of the Emigrant Hospital, a position held by him for nearly twenty years. He was Professor of Surgery for many years in the New York Medical College (now extinct), and was the author of several works on operative surgery. He was Health Officer of the port of New York, from 1870 to 1872. His name is identified with the bold operation, first done by him in 1856, of exsecting the second branch of the fifth pair of nerves for facial neuralgia, and with a large and original experience in the field of arterial surgery.

REVIEWS.

Druitt's Surgeon's Vade Mecum. Edited by Stanley Boyd, M.B., B.S. Lond.; F.R.C.S. Eng.; Assistant Surgeon to the Charing-Cross Hospital; and Surgeon to the Paddington Green Hospital for Children. Twelfth edition. 8vo. pp. xvi. 985. Philadelphia: Lea Brothers & Co., 1887.

An admirable edition of an old favorite. Few books have enjoyed a wider or longer sustained popularity, or have more fully come up to the ideal of a vade mecum than Druitt's *Surgery*. No less than 50,000 copies have been sold in England alone, while in this country the book has had extensive collegiate recommendation and Federal patronage. Mr. Boyd has revised, and, in great measure, rewritten the book, adding sections on surgical diagnosis, and giving greater prominence to pathology. The chapter on diseases of the eye has been omitted, and one on injuries of the orbit and its contents inserted instead. A large number of new, and some of them admirable illustrations, have been added, and the latest and best authorities are relied upon for the statements made, and the rules of practice laid down. Although Mr. Boyd says he has attempted to keep down the size of the book, from the enlarged field of modern surgery, and the additions to which we have referred, the volume has very considerably expanded in comparison with the "Druitt" of our youth. We have no hesitation in saying that the book is abreast of the times, and desirable for students, and especially for those practitioners who wish their book for surgical reference to be in the most condensed form.

Syphilis. By Jonathan Hutchinson, F.R.S., LL.D., Consulting Surgeon to the London Hospital and to the Royal London Ophthalmic Hospital; Vice-President of the Royal College of Surgeons. With 8 chromo-lithographs. 16mo. pp. xii. 532. Philadelphia: Lea Brothers & Co.

A valuable addition to the series of clinical manuals of its publishers, by an expert and accomplished writer, moderate in tone, judicious in spirit, and yet expressing the decided convictions of one whose experience entitles him to speak with authority, the student, no matter what may be his age, will find in this compact treatise a valuable presentation of a vastly important subject. It is in every respect abreast of the present state of our knowledge, and is well entitled to full confidence as the work of one who has made a lifelong study of the disease. The chromo-lithographs are very good illustrations of choroiditis and keratitis, of vaccination syphilis, of erratic chancres, and the changes produced in the tongue, teeth, and nails. Altogether we know of no better or more comprehensive treatise on syphilis, which at the same time is condensed into the small compass so much desired by the busy men of the present day.

SOCIETY PROCEEDINGS.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, October 26, 1887.

Charles McBurney, M.D., in the Chair.

EXSECTION OF THE ELBOW FOR TUBERCULOUS DISEASE.

Dr. Gerster presented a patient with the following history:

Rudolph B., aged twelve, was admitted to the German Hospital, having tuberculous osteitis of the right olecranon, with two large abscesses and a fistulous opening leading into the joint. On March 30th, a partial exsection of the elbow was performed, and a sequestrum was removed from the olecranon, a shell of bone being preserved, to which was attached the triceps tendon. No drainage tubes were inserted, but the joint was closed and put up in the semi-flexed position. On April 12th, the dressings were removed, primary union having occurred. The elbow was then put up at a right angle, and passive motion was employed every three or four days, in spite of the fact that it caused some pain and swelling. During one of the exercises the cicatrix was ruptured, and bloody serum exuded; after that,

there was a persistent serogarulent discharge. Later, exuberant granulations appeared about the fistula, so that it was necessary to scrape it out two or three times.

On June 10th, complete excision was performed, as ankylosis seemed to be inevitable. The soft parts showed gelatinous infiltration, especially around the head of the radius, while there was a cheesy focus between the ulna and radius. About an inch of the humerus, radius, and ulna were removed, and the joint was put up in a semi-flexed position, the dressings being left undisturbed for five weeks, when they were removed and *active* movements were made. The boy began to use his joint almost from the first, and has continued to improve ever since; it has not been necessary to use the ordinary apparatus with lateral hinges. There is now considerable mobility, flexion and extension being normal; while pronation and supination are fair and will improve. The speaker stated that he had reported the case in order to call attention to the fact that a good result might be obtained by a secondary operation after partial excision had proved to be unsatisfactory.

DR. SANDS thought that the result was quite good, since the arm could be flexed and extended very well in one plane. He assumed that no one questioned the advisability of performing the partial operation only when it would be likely to effect the desired result. He had presented a patient to the Society a year before, in whose case he had removed a portion of the ulna and condyles, there being a cheesy focus limited to one condyle. There was better motion subsequently than after complete excision. He no longer performed the complete operation when the partial one was sufficient. He had sometimes removed the synovial membrane alone, leaving the healthy cartilage. This practice was the reverse of the old rule, which prescribed complete excision in every case. The advantages of partial excision were conspicuous when operating for tuberculous disease of the knee in young subjects, as in many cases the parts affected could be thoroughly removed without serious disturbance of the epiphyseal cartilage, the destruction of which would interfere with the growth of the limb.

DR. GERSTER said that he desired to lay particular stress upon the fact that passive motion had been entirely withheld, and active movements had not been begun until the swelling had subsided. The old teaching was to commence "early" movements after the operation; but this meant in from six to eight weeks, because formerly there used to be abscesses around the joint, so that manipulation had to be delayed. He believed that he had often begun to make movements too soon, as a result of which he had caused ruptured of the connective tissue and effusion, thus retarding the healing. It was better to wait until the swelling had entirely subsided, and then to try active movements only.

DR. WEIR thought that the tuberculous deposit is more commonly found in the ends of the bones, when partial excision is more likely to be successful. Moreover, when the disease is confined to the synovial membrane and capsule, it may be sufficient to remove this alone, although the results of the operation, the arthrectomy of Volkmann, had not been very satisfactory in the hands of other surgeons. But, when the bone and the capsule were both affected, complete excision should be performed at once.

DR. STIMSON said that he had excised the capsule five or six times for disease which was apparently limited to it, and in three cases he had been obliged to perform complete excision subsequently. The subject had been discussed at a meeting of the Society a year before, and at that time other members had reported similar results. He thought that pronation and supination would always be imperfect in the case of the patient shown, for they were then effected by rotation of the ulna upon the humerus.

DR. GERSTER, in reply to a question by Dr. Abbe, said that the ends of the bones had originally been placed in apposition, but that they had become separated half an inch, as a result of lifting weights.

REMOVAL OF TUMOR (?) FROM THE BRAIN.

DR. MARKOE presented a patient and read the following report of the case:

Sidney McLowrie, aged twenty-five, England, gives the following history: In the year 1879, he fell from a height of about eight feet, striking on his head. He was stunned by the blow and remained unconscious for a certain time. Brain fever followed, from which he gradually recovered, until about two months from the time of the accident, when he had his first convulsion. Convulsions now recurred at irregular intervals for about two years, sometimes becoming as frequent as three or four in a night. These attacks gradually became less frequent, and at the end of two years ceased altogether. He had then regained good health and was able to attend to his daily duties as a clerk. There was no renewal of epileptic seizures until about a month before his admission to the hospital, January 15, 1887. At that time, while taking a bath, he accidentally struck his head, receiving rather a severe blow. No marked effects followed the blow, but within a week after a convulsion occurred, which was repeated at intervals more or less frequently, until they became as frequent as four during the night.

On admission he was anæmic and thin, but nervous and excitable, and quite intelligent. He had perfect possession of all his faculties, both mental and physical, and at no time had had any symptoms which could be referred to a cerebral lesion, except pain and the convulsions above mentioned. The head was irregular in shape, the frontal region prominent, the right parietal region bulging markedly, while the corresponding region on the left side was as markedly depressed. In the centre of this flattened area was a marked depression over a space as large as a half dollar. Has had continual dull pain referred to the depressed spot. He had lately suffered a good deal of pain in the head, which had almost always been referred to, and had radiated from this same point, though at times the pains had been felt on the right side. He was ordered to keep his bed, to be put upon light diet, and to have bromide of sodium, thirty grains, three times a day.

On the third day after his admission, he had his first convulsion, which was followed by two more before morning. There was no aura, and no cry, nor did the muscular spasm begin at any single point. The spasm took the form of opisthotonos, alternating with extreme flexion, and followed by sleep.

January 21. No convulsions until last night, when he had five.

25th. Number of fits increasing. Bromide increased, and ordered six leeches over the region of pain. Violent, almost maniacal, excitement follows some of the convulsions. No diminution in the number of fits.

An operation was determined upon, and performed January 27th. The point of operation selected was the centre of the depressed portion of the left parietal bone, which corresponded quite accurately with the region of greatest pain, and which was on a level with, and about an inch and a quarter in front of, the left parietal bone. The operation was done after Victor Horsley's method, with a semicircular flap of the scalp, and a large trephine, one and a quarter inches in diameter. On removing the disk of bone, the dura mater did not bulge, but nevertheless presented a decided sense of fluctuation. Between the dura mater and the brain a firm, hard surface was felt, which the finger reached after pressing through perhaps two lines of fluid. The dura mater was now opened by a semicircular incision, one line within the edge of the saw-cut. When it was turned back, a surface was exposed of a bluish-white color, as if it were the surface of a thin, semi-transparent sac, containing fluid. The sac being opened, gave issue to some thin, pellucid fluid, in quantity at least a drachm, and revealed the contents to be two unequal bodies, of a rounded shape, lying close together, forming a mass about an inch in diameter as looked at from above. These masses did not present the appearance of the normal cortex, but were more grayish in color and of a distinctly granular appearance, and to the touch they were firmer than the normal surface of the brain. Without the use of any force, the handle of the scalpel passed easily around the mass, and turned ou of the areolar bell in which it had lain. This removal showed the walls of the cyst to be continuous around the periphery of the tumor, and that the whole had been buried deep in the cerebral substance, pressing it down more than half an inch.

As I turned the mass out of its bed, I was not aware that I had divided any portion of cerebral matter, but, on studying the cyst wall after the mass had been removed, I saw a portion of exposed cerebral matter a: the anterior margin of the opening, and, though I examined it with care, I could not decide whether this was a point at which the tumor had been continuous with the convolution, or whether it was merely the surface of the convolution accidentally bared. This spot of exposed brain matter was about two lines in diameter. No hemorrhage took place during or after the enucleation. The dura mater was brought together with two or three catgut sutures, and the scalp-flap was accurately approximated in the same way. Light antiseptic dressings were applied, and two or three threads of large-sized catgut were left in the wound for drainage. Moderate reaction followed the operation. Some mental excitement, with amnesic aphasia was noticed during several days after the operation, with some paresis of the right arm. These symptoms, however, never reached a serious degree and subsided during the second week entirely. The wound healed *per primam*, and he was discharged well on the 19th of February, no convulsions having occurred since the operation twenty-three days previous.

The following is Dr. Prudden's account of his examination of the mass submitted to him.

"The small fragment of brain tissue which was sent to the laboratory was ellipsoidal in shape, measuring about 1½ by 1 cm. It consisted of white, and gray brain matter normally arranged." The ganglion-cells lying, as usual, in layers, are nearly all considerably swollen and prominent. The intercellular substance is somewhat cracked and fissured, which might be due to the hardening in alcohol. The most marked departure in structure from the normal was an accumulation of small spheroidal cells in the lymph-spaces around the ganglion-cells. Sometimes as many as six or seven of these small cells lay crowded around the ganglion-cells. This accumulation of cells in the lymph-spaces has been described as occurring under a variety of conditions. The appearances are figured in Virchow's *Archive*, Bd. 69, in connection with an article by Herzog Carl von Bayern on the condition of the cortex in abdominal typhus. The microscopic appearances do not throw much light on the peculiar conditions which you found at the operation, and I am entirely at loss to account for them, except on the hypothesis of an aberrant fragment of brain tissue which had developed at the seat of operation."

October 26. From the time of his discharge from the hospital, up to the present moment, his health has been perfectly good, No abnormal sensation about the seat of the wound, and no pain in the head. The only exception to be made to this statement is an attack of pain rather severe, intermittent in character, and seated in the region of operation. He himself is disposed to consider the attack as the result of unusual devotion to work, he having undertaken to acquire the art of shorthand writing, and having given every evening to that study. The attack lasted only three days and then entirely subsided. This seizure came on rather suddenly, about the first week in October. His habits have been perfectly correct in all respects, and with the exception mentioned above, he has been able to attend regularly to his duties.

This case was of some interest as throwing light confirmatory of the views now entertained with regard to cerebral localization. The tumor, while undisturbed, gave no indication as to the locality. After removal, however, the slight inflammatory action set up in its areolar bed was sufficient to produce aphasia and paresis of the right arm. The position of the tumor corresponded very nearly to the centres for the arm and for speech.

NEPHRECTOMY BY LAPAROTOMY FOR ADENOMA OF THE KIDNEY; RECOVERY WITH VENTRAL HERNIA.

Dr. Weir presented a patient from whom he had removed a tumor of the kidney as large as the two fists, and weighing twenty-one ounces. This tumor was shown to the Society last January, and the history of the case was then related in detail. (The Medical News, March 12, 1887.) The prognosis given by Dr. Peabody, after a microscopical examination, was not favorable, since he was inclined to look upon the growth as having a strongly malignant tendency. Nevertheless the patient was in good health, having gained forty pounds in weight, and was able to pursue his laborious occupation as a butcher, being only troubled by a her-

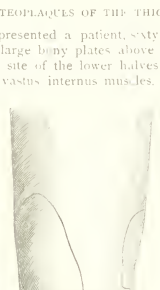
nial protrusion at the site of the incision; this was supported by a bandage. The incision was made at the outer edge of the rectus, according to Langenbuch's method, and in closing it the transversalis fascia had been sutured separately, as were the muscles also, in order to counteract the tendency to hernia which resulted from abdominal incisions. After the removal of the tumor, the cut edges of the peritoneum originally covering the kidney were brought together over the stump, and an opening was made posteriorly for drainage. Although there was considerable hemorrhage during the operation, the spouting vessels were readily secured with compression forceps through the anterior incision, which could have been done only with great difficulty through the lumbar incision.

DR. WYLIE, and other surgeons, suggested the advisability of performing a secondary operation for the cure of ventral hernia after laparotomy, the peritoneal cavity being opened and the peritoneum and transversalis fascia being sutured separately.

DR. WYETH said that he had been called to assist Dr. Wylie in an operation for the cure of ventral hernia following laparotomy, in which a good result was obtained. The peritoneum was united separately, and a series of deep sutures were carefully passed through the muscle and fascia. The speaker had adopted this method of closing the wound after laparotomy and believed that he had in this way prevented the subsequent formation of hernia.

OSTEOPLAQUES OF THE THIGH.

DR. ABBE presented a patient, sixty years of age, showing two large bony plates above the left knee, occupying the site of the lower halves of the vastus externus and vastus internus muscles. The internal



one measured six and one half by four inches, and had an estimated thickness of an inch. They were freely movable. They represented the amalgamation of numerous bony nodules in the muscle, first observed as long as forty years ago. They had been watched by him for three years, and had changed but little. The flexing of the knee was partially restricted and painful intervals the joint became painful and a little swollen when overtaxed.

DR. WEIR stated that he had seen the patient in 1884, and learned from him at that time that he had first noticed a number of small, hard nodules, which subsequently coalesced.

DR. STIMSON believed that the bony mass on the outer side had developed in the lateral ligament of the patella, and that its inner surface was in contact with the interior of the joint, as evidenced by crepitus on manipulation. On the opposite side the upper portion of the osteoplaques was evidently embedded in the muscle, while the lower portion appeared to occupy the capsule of the joint.

DR. WEIR said that he had seen a case in Schede's wards, in Hamburg, in which the nodules were confined to the muscles of the back and upper extremity. The pathology of the affection was obscure, only one autopsy having been made. *Myositis ossificans* (of which there were only about twelve or fifteen recorded cases) usually began in early life, and might follow inflammatory processes. It was sometimes thought to be of nervous origin, although the autopsy alluded to showed no nerve lesion. It was noted that in these cases the earthy phosphates in the urine were usually much diminished.

DR. BRIDDON said that he recalled the case of a patient who was presented at the Pathological Society several years before. He was a boy ten or twelve years of age. The osseous plates were confined to the trapezius muscles, and were unquestionably intramuscular.

EMPYEMA FOLLOWING STAB-WOUND OF THE PLEURA; RECOVERY AFTER EXSECTION OF PORTION OF A RIB.

DR. WYETH presented a patient, whose history was as follows: A man, aged thirty-five, was stabbed four or five times in the left side, three years ago; the lung was said to have been wounded. Considerable hemorrhage into the pleural cavity occurred, and a quantity of blood and serum was removed with a trocar and canula. The operation was repeated twice during the following two months, when the fluid was found to be purulent. Septic symptoms developed, and an incision was made to promote free drainage.

Dr. Wyeth saw him for the first time one year ago last May, and found that he was wearing a rubber drainage tube, which was closed by the pressure of the ribs between which it passed. Two inches of the seventh rib were exsected, and as much of the cavity as could be reached by the index-finger was thoroughly scraped out. The wall of the abscess could not be felt in a posterior direction, although the finger penetrated to its entire length. Two stiff rubber drainage tubes were introduced. The patient's convalescence was retarded by his dissipated habits, so that it was nine months before he could remove the tubes. The cavity was first washed out every third or fourth day (but later in the management of the case daily injections were made) with a solution of bichloride, beginning with a 1 : 3000, and gradually increasing in strength up to 1 : 500. Fifty or sixty injections of the latter were given without causing any symptoms of bichloride-poisoning. A weaker solution was always injected immediately after the strong one, in order to wash out any excess of the sublimate. The lung on the affected side was now collapsed, but on the other side the respiratory movement was good, and the patient was fully restored to health.

DR. SANDS thought that the case illustrated clearly

the value of a free opening in cases of purulent effusion into the chest. He had seen several cases in which, from the neglect to perform an operation early, the lung had been so bound down that it was impossible to effect a cure, even by removing portions of ribs. In one instance, at Roosevelt Hospital, he had exsected three inches from two ribs, but without curing the patient. If an opening was made early, Estlander's operation might be unnecessary. Dr. Wyeth's case also showed that it was not always necessary to remove much of the rib when the lung was remote from the chest-wall.

DR. WYETH, in reply to a question by Dr. Weir, said that he had not measured the contents at the time of the operation, but a few weeks after the cavity would hold about half a pint of fluid.

DR. WEIR said Estlander's operation had not given as good results as had been expected; it was often necessary to repeat it two or three times. Even after removing portions of ribs, the surgeon was often obliged to scrape out the cavity, to employ stimulating injections, or even to make a counter-opening. Sometimes the empyema-cavity could be further lessened at the performance of Estlander's operation by fracturing some of the ribs posteriorly.

DR. WYETH said that the most important point was to secure perfect drainage from the bottom of the cavity, and to wash it out frequently. He used tubes of stiff, white rubber. In reply to Dr. Sands's statement that he always used two tubes, side by side, the speaker said that he had omitted to mention that he had also employed two tubes in the same manner.

DR. POORE asked if a simple incision was not sufficient in most cases of empyema, without exsecting a piece of rib.

DR. WYETH replied in the affirmative.

DR. BRIDDON cited the case of a patient upon whom he had operated at the Presbyterian Hospital, removing portions of five ribs. Although the cavity was diminished in size, it still contained three ounces of pus when the patient left the hospital. A second operation was proposed and declined.

OSTEOMA OF THE UPPER JAW; REMOVAL OF THE SUPERIOR MAXILLA, WITHOUT MAKING AN INCISION THROUGH THE CHEEK.

DR. WYETH presented a patient from whom he had removed an osseous tumor of the left superior maxilla, involving almost all of this bone (the specimen was shown). He was a German, æt. twenty-eight, who at the age of fourteen had noticed a small swelling on the left upper jaw. It grew slowly, and was examined by a prominent German surgeon, who pronounced it to be a benignant growth. The speaker saw him for the first time six months before; the tumor was then increasing in size, and caused considerable deformity, so that an operation was advised. It was readily removed through the mouth, *without an incision being made through the soft parts of the face*, by the subperiosteal method. The growth involved the antrum, the whole of which was removed. Goodwillie's gag proved of great assistance during the operation. The periosteum was sutured with silk, and the patient left the hospital on the fourth day after the operation. The bone had been largely restored.

CORRESPONDENCE.

STROPHANTHIN VS. DIGITALIS.

To the Editor of THE MEDICAL NEWS,

SIR: Referring to your editorial note on the use of ergot in combination with digitalis, in a late issue of the journal, permit me to add a few words to your friendly criticism on the methods advised by Rosenbach.

Accepting as true, your statement, "that aortic insufficiency is, of all the valvular lesions of the heart, the very one which rather contraindicates the use of digitalis, in that it not only prolongs diastole, but likewise increases the ventricular capacity, thereby permitting a greater opportunity for regurgitation into the ventricle," I would go a step further, and point out the objectionable effects of digitalis in cases of this character, by reason of its pronounced influence upon the bloodvessels. I fully agree with you as to the undesirable action of ergot, its effect being to increase the expenditure of force on the part of the heart in overcoming the resistance in the arterioles; but how shall we meet a similar objection to digitalis?

The first centennial anniversary of the introduction of digitalis into medicine has lately been noted, and yet its therapeutical position is still indifferently understood. When we take into consideration that digitalis may be given to the extent of preventing the blood from passing through some of the bloodvessels, while the heart still continues to act, then do we begin to appreciate the conditions attending its so-called cumulative action, although I have lately been disposed to regard this so-called cumulative action as a misnomer, if not a myth. In cases of poisoning from the cumulative action of digitalis, we are taught that the heart is paralyzed and stops in diastole. Professor Bartholow says: "When, after the administration of large doses, the pulse is much reduced in the recumbent posture, on rising, the heart is suddenly found unequal to maintaining the circulation in the face of the increased resistance in the arterioles and against the force of gravity." It is evident, then, that digitalis is a remedy which diminishes the calibre of the arterioles, and acts on the cardiac muscle at the same time, but not in equal proportion on both, else there would be no loss of compensation.

Had we a remedy which would increase, say, two or three times the power of the heart, and act less energetically on the arterioles than digitalis, and thus equalize the compensation, it would be an acceptable addition to our *armamentarium*. A remedy which would act principally upon the heart, and slightly upon the bloodvessels, which, like digitalis, would produce diuresis and reduce temperature, would be suitable for exhibition in cases of "aortic insufficiency," and in cases of "idiopathic dilatation of the heart with alterations in the elasticity and contractility of the bloodvessels," instead of digitalis and ergot, as advised by Rosenbach. Such a remedy we have in strophanthus hispidus, first introduced by Pelikan in 1865, and studied thoroughly by Professor Fraser, of Edinburgh, who, twenty years later, placed the drug, with its physiological action and therapeutical indications, before the British Medical Association. As compared with digitalis, its

action on the heart is more than twenty-five hundred times greater; while on the bloodvessels its action is less than one-tenth that of digitalis.

Let me quote, in conclusion, and in support of the above statement, from Professor Fraser's paper (*Brit. Med. Journ.*, Nov. 14, 1885): "Solutions of digitalis, 1 part in 4000, passed through the separated frog's heart by means of Williams's apparatus, produced characteristic changes in the heart's action, but were not sufficiently strong to kill it within two hours; while a solution of strophantin,[1] 1 part in 10,0000,000, produced characteristic changes in the heart's action, and killed the heart. A solution of 1 part in 6,000,000 was sufficiently strong to cause complete stoppage of the heart in extreme systole in about twenty minutes. Taking the same preparation as had been used upon the heart, and passing solutions through the bloodvessels, it was found that digitalin, 1 part in 20,000, produced, in six or seven minutes, such extreme contractions of the vessels as practically to prevent the solutions from passing any longer; while but a temporary effect, which was soon recovered from, was produced when the solution of strophantin was increased to 1 part in 2000." It would seem, therefore, that in the diseases mentioned above, strophantin, as respects the heart, is twenty-five hundred times more efficient, while in respect to the bloodvessels, its use is followed by less than one-tenth the activity of digitalis, thus presenting a material contrast between the two remedies. Whether the position of strophanthus will be settled finally as being *twenty-five thousand* times more valuable than digitalis, I leave for physiologists of a mathematical turn to determine.

Very respectfully yours,

JOHN AULDE, M.D.

4719 Frankford Ave., Philada.,
October 29, 1887

[1] Prof. Bartholow regards *tin* as the proper termination.

AID FOR THE MEDICAL COLLEGE AT SHANGHAI.

To the Editor of THE MEDICAL NEWS.

SIR: Allow me to ask your aid on behalf of the medical department of St. John's College, Shanghai, China. We have in Shanghai, hospitals for natives with about 230 beds; we have out-patient departments, treating some 23,000 or 24,000 individual out-patients every year. Our facilities for clinical teaching are good. These institutions are supported by their own earnings and by local charity. We do not need any money for them. We own the land and a building for the medical school; we have the nucleus for a medical library and a medical museum, and we hope that this museum will—by contributions from all parts of China—become a most important and valuable institution. Shanghai is the business centre of China, most easy of access from all parts of the empire. Our medical school has four lecturers and one tutor, and we have a small class of medical students. Candidates for medical instruction undergo a preliminary examination; after admission they study three months, when they have to pass another examination. Should they not show aptitude for the study of medicine they are required to leave the class. If proficient they sign an agreement to remain and study for four years. The first two and a half years they are in the medical school, the last year and a half they act as internes at St. Luke's Hospital. They then pass their eighth final examination, and are free to go out and practise medicine. While our hospital is independent, needs no help, we need about $800 a year, for a few years to come, to enable us to keep the medical school going. When our graduates begin to earn a living as doctors, we shall have so many applicants for medical instruction that we shall become self-supporting. Can you lay these facts before the medical profession of this country and ask them to help us? The smallest contributions will be thankfully received. We hope that medical authors will donate copies of their works to our library, that the medical book publishers will give us books for our library, and that the medical profession of the United States will help us to give the benefits o modern medical science to the people of this great nation, and thus help, on a grand scale, to alleviate the vast amount of human suffering among the three hundred millions of people in China. Any contributions in money or donations of books, can be sent to Rev. Dr. Wm. S. Laryford, Secretary of Board of Missions, 22 Bible House, N. Y., and they will be forwarded to China. I remain,

Yours, faithfully,

H. W. BOONE, M.D.,
Vice-President Medical Missionary Association of China; Lecturer on Surgery,
Med. Dept St John's College, Shanghai, etc.

PHILADELPHIA, October 26, 1887.

NEWS ITEMS.

THE DISCUSSION ON CHOLERA AND INTERNATIONAL LEGISLATION AT VIENNA.—In the discussion on cholera in the Third Section, PROF. MAX GRUBER, of Vienna, speaking of certain experiments which he had made, in Austria, in 1885 and 1886, as to the spread and prophylaxis of cholera, concluded his remarks by saying that Koch's vibrio was the specific agent in Indian cholera, and that it was propagated by patients suffering from the disease or by infected clothing, linen, etc. In his (the speaker's) opinion, it had not been proved that cholera could be transmitted by drinking-water. It was quite evident that the spread of cholera depended on seasons and weather. The etiology of cholera had still to be determined. The prophylactic measures which had been adopted in Austria to prevent the spread of the disease by patients suffering from it were, nevertheless, fully justified, and if they had not been as successful as might have been wished, that was due to the difficulty, or rather impossibility, of carrying them out with adequate strictness. It was necessary that sanitary organization should be improved, and particularly that proper instruction in hygiene should be given in the public schools. Dr. Shiba-Saburo Kitatair, member of the Ministry of the Interior of Japan, reported on the cholera epidemics which had visited Japan, first in 1822, and afterwards in 1877, 1879, 1882, 1885, and 1886, and stated that the disease had always been imported into Japan from China by English or French ships. In its method of dealing with epidemics Japan was, according to the speaker, fully abreast of the most enlightened countries.

The suggestions made by Mr. Shirley Murphy, which were almost identical with those made by the other reporters, were as follows: 1. The appointment of a sanitary authority at every port, whose duty it should be to keep himself informed as to the sanitary condition of the port, and the health of the passengers and crews of vessels arriving at or leaving the port. This information should be placed at the disposal of the Consuls of the countries to which the vessels are bound. 2. Every country to have a central office, to which reports should be sent of the number of cases of specified epidemic disease occurring in every large town and port during each week, immediate notice being sent of cases of cholera. This information should also be placed at the disposal of the governments of other countries. 3. Precautions must be taken by the sanitary authorities and officers of vessels as already indicated, to prevent the embarkation of persons or articles infected with cholera. 4. A station should be established on the Suez Canal for the purpose of obtaining information as to the health of passengers and crews of vessels bound for Europe, but not for their detention for more than the time necessary for procuring this information. 5. This information should be placed at the disposal of representatives of the different governments. 6. Every vessel arriving at a European port should be dealt with in accordance with the manner determined on by the government of that country.—*British Medical Journal*, October 22, 1887.

Gleditschine.—F. A. Thompson, Ph.C., reports as follows to Messrs. Parke, Davis & Co., at whose request he analyzed a sample of the substance called "gleditschine:"

My conclusions, subject to further analysis, which I hope may identify the exact constituents, are:

1. That the solution claimed to be a two per cent. of gleditschine, is not what it is represented, and that those introducing it as such are guilty of fraud.

2. That the solution likely contains some coloring agent, differing from that obtained from the drug in which the alkaloid is isolated, or that the color may be due to the presence of an alkaloid, or the substance supposed to be in combination with the cocaine.

3. That the peculiar action of the extracted alkaloid to chemical tests, appearance, taste, and odor, suggest it to be none other than cocaine.

4. That the presence of chloride and sulphate indicates positively that a sulphate of one alkaloid and a muriate of another are present; and the presence of cocaine being established, which is without doubt in the form of muriate, the sulphate can be accounted for only by assuming that it is in combination with *atropine*, or some other mydriatic alkaloid, such as *duboisine*.

5. The solution contains 6.85 per cent. of alkaloid, calculated as cocaine muriate, instead of 2 per cent. of gleditschine (!) as stated on label.

6. That the dilatation of the pupil of the eye was thought to be more lasting than from cocaine, and less so than from atropine, indicating the possible presence of some myotic, modifying the action of the mydriatic. Experiencing no dryness of the throat or any hallucinations from the hypodermatic injection of the solution, it is possible no *mydriatic* except cocaine is present.

7. That the statement made, that the salt was not permanent, and finding the salt of the alkaloid in this solution quite so, leads one to suppose that this *is not the reason for making such an assertion*.

8. That having had placed at my disposal through the firm of Parke, Davis & Co., several pounds of the leaves, from which I am unable to produce, as yet, but a trace of alkaloid giving precipitates with the usual alkaloidal reagents, and which, applied to the tongue, produces no sensation whatever, and the existence of a volatile consituent very probably, and a large amount of resinous-like substance having strong astringent properties being present, I question the existence of an anæsthetic or mydriatic alkaloid in Gleditschia triacanthus.—*Medical Age*, October 25, 1887.

Gleditschine Again.—Mr. Nooy, of the Hygienic Laboratory of the Michigan University, also states in the *Pharmaceutische Rundschau* for November, 1887, that the so-called gleditschine or stenocarpine is nothing but a mixture of cocaine and atropine, and that the 2 per cent. solution which is on the market is nothing but a 6 per cent. solution of cocaine hydrochloride and ½ of 1 per cent. of atropine sulphate, to which has been added ½ of a per cent. of salicylic acid to act as a preservative.

The Washington Obstetrical and Gynecological Society has elected the following officers for the ensuing year:

President—Samuel C. Busey, M.D.

Vice-Presidents—D. W. Prentiss, M.D., and W. W. Johnston, M.D.

Treasurer—George Byrd Harrison, M.D.

Recording Secretary—Samuel S. Adams, M.D.

Corresponding Secretary—G. Wythe Cook, M.D.

The Health of the Crown Prince.—The *British Medical Journal* of October 22d, states "plainly and without any diplomatic reserve or ambiguity," that, according to the best authority on the subject, the Crown Prince's condition is, up to this morning, highly satisfactory. There is no recurrence whatever of the growth; the functions of the parts are not interfered with in the slightest degree, except that the voice is still rather weak; there is no appearance or sensation in the throat that need cause either alarm in the present or well-grounded apprehension as to the future.

Sir William Gull is reported to be progressing favorably. Power of action in the affected extremities has been regained, and sensation is returning.

The buffalo has been recently utilized for the propagation of vaccine virus, with excellent results. The experiment was performed in India.

Stricker's Electric Microscope.—The *British Medical Journal* of October 8, 1887, thus describes a recent invention of this distinguished histologist, as exhibited at the recent Congress of Hygiene at Vienna:

A very interesting feature of the programme on Wednesday, September 28th, was the demonstration of Stricker's electric microscope by the Professor himself. The lecture-room of the famous histologist was crowded to overflowing, and a large number of visitors

could not find places. Among those present were the following: Archbishop Corrigan, Herbert Spencer, Wells, Sir John Thomas Mirault Erichsen, and many others. Professor Stricker began by showing a transverse section of the spinal cord; he alternately used projecting lenses of an increasing power, and was able to demonstrate the constituents of the spinal cord, the ganglion cells, and the nerve fibres so distinctly, that even the faintest outlines of the microscopic details could be distinctly seen by all present. The wall on which the microscopic objects were projected was at a distance of six metres from the electric microscope. Among the preparations there was also a transverse section of the spinal cord, taken from an individual who had been executed some time ago. Professor Stricker succeeded in demonstrating, particularly by means of this specimen, the details of the structure of the spinal cord in a very distinct manner. After Professor Stricker had also demonstrated a number of other specimens, he showed the utility of the reflected light in his microscope. He succeeded in projecting, with a 25-fold linear augmentation, specimens of bones so distinctly, that the minutest constituents could be quite distinctly seen from the furthest part of the room. Lastly, he showed the movements of the heart of a turtle as projected by his electric microscope. The evening which the members of the Congress passed in Professor Stricker's lecture-room was one of the most interesting during the whole session of the Congress, and the demonstrations were all received with the most enthusiastic applause.

THE BEST SOLDER FOR CANS CONTAINING FOOD.—Mr. T. P. White, in a communication to the Chemical Society, gives a decidedly negative answer to the question whether the acids of canned fruits may not form poisonous salts with the tin. He reports, as the result of his experiments, that "tin is entirely devoid of danger when taken internally in any form that might arise from being in contact with fruits or vegetables." He believes that the cases of accidental poisoning attributed to tin were due to solder or other impurities—arsenic, copper, or lead. Prof. W. Mattieu Williams says that that there need be no lead in the solder—that it is only put in for cheapness' sake, and that tin makes a superior solder to any alloy. Therefore, all danger may be obviated by prohibiting the use of any other solder than pure tin.—*Popular Science Monthly*, October, 1887.

COBALT AN ADULTERANT FOR MILK.—Cobalt blue has been used to give a bluish tinge to yellow milk, and is dangerous on account of the arsenic which it contains as an impurity.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY, FROM OCTOBER 25 TO OCTOBER 31, 1887.

GREENLEAF, CHARLES R., *Major and Surgeon.*—Will proceed from this city to the places hereinafter named, in the order in which they are named, for the purpose of investigating the methods of examining the recruits at the depots and rendezvous located thereat, and of instructing recruiting officers in matters pertaining to such examinations: Baltimore, Md.; Philadelphia, Pa.; Camden, N. J.; New York City and David's Island, N. Y.; Boston, Mass.; Portland, Me.; Albany and Buffalo, N. Y.; Cleveland, Ohio; Detroit, Mich.; Chicago, Ill.; Milwaukee, Wis.; St. Paul, Minn.; Jefferson Barracks and St. Louis, Mo.; Cincinnati and Columbus, Ohio; and Pittsburg, Pa.—*S. O. 249, A. G. O.*, October 25, 1887.

CLEAVE, J. A., *Major and Surgeon.*—Ordered to proceed from Fort Hancock to Fort McDowell, and report to the commanding officer for duty as Post Surgeon.—*S. O. 111, Department of Arizona*, October 18, 1887.

ADAIR, G. W., *Captain and Assistant Surgeon.*—The leave of absence for seven days, granted on the 27th instant, by the commanding officer, Fort Brady, Michigan, is extended twenty-three days.—*S. O. 231, Division of the Atlantic*, October 28, 1887.

MUNN, CURTIS E., *Captain and Assistant Surgeon.*—Relieved from duty at Fort Canby, Washington Territory, and ordered for duty as Post Surgeon, at Fort Klamath, Oregon.—*S. O. 251, A. G. O.*, October 28, 1887.

BYRNE, CHARLES B., *Captain and Assistant Surgeon.*—Ordered for temporary duty at Fort McHenry, Maryland.—*S. O. 231, Division of the Atlantic*, October 28, 1887.

BROWN, PAUL R., *Captain and Assistant Surgeon.*—Leave of absence extended one month.—*S. O. 250, A. G. O.*, October 27, 1887.

BURTON, H. G., *Captain and Assistant Surgeon.*—Ordered from Plattsburg Barracks, New York, to Watervliet Arsenal, New York.—*S. O. 249, A. G. O.*, October 26, 1887.

MERRILL, J. C., *Captain and Assistant Surgeon.*—Ordered from Watervliet Arsenal, to Frankford Arsenal, Pennsylvania.—*S. O. 249, A. G. O.*, October 26, 1887.

RICHARD, CHARLES, *Captain and Assistant Surgeon.*—Granted leave of absence for one month, to take effect when his services can be spared by his Post Commander.—*S. O. 247, A. G. O.*, October 22, 1887.

JARVIS, NATHAN S., *First Lieutenant and Assistant Surgeon.*—Ordered from the Department of the Platte to the Department of the Missouri, for duty in the field.—*S. O. 249, A. G. O.*, October 26, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 29, 1887.

BATES, N. L., *Medical Inspector.*—Ordered to hold himself in readiness for orders to the "Trenton."

HESLER, F. A., *Assistant Surgeon.*—Ordered to examination for promotion.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING OCTOBER 29, 1887.

BALLIACHE, P. H., *Surgeon.*—To proceed to Buffalo, N. Y.; Erie, Pa.; Ashtabula, Cleveland, Sandusky, and Toledo, Ohio, as inspector, October 4, 1887.

FESSENDEN, C. S. D., *Surgeon.*—Detailed as Chairman of the Board for the Physical Examination of Cadets, Revenue Marine Service, October 15, 1887. To proceed to Cape Charles Quarantine Station, as inspector, October 26, 1887.

SAWTELLE, H. W., *Surgeon.*—Detailed as Chairman of the Board for the Physical Examination of Officers, Revenue Marine Service, October 27, 1887.

IRWIN, FAIRFAX, *Passed Assistant Surgeon.*—To inspect unserviceable property at Boston, Mass., and Portland, Me. To proceed to Vineyard Haven, and New Bedford, Mass., as inspector, October 8, 1887.

MEAD, F. W., *Passed Assistant Surgeon.*—Detailed as the Recorder of the Board for the Physical Examination of Cadets, Revenue Marine Service, October 15, 1887.

WHITE, J. H., *Passed Assistant Surgeon.*—Leave of absence extended four days, October 21, 1887.

CARRINGTON, P. M., *Assistant Surgeon.*—Detailed as the Recorder of the Board for the Physical Examination of Officers, Revenue Marine Service, October 27, 1887.

FAITIC, J. B., *Assistant Surgeon.*—Granted leave of absence for seven days, October 28, 1887.

PETTUS, W. J., *Assistant Surgeon.*—When relieved at Savannah, Ga., to proceed to Galveston, Texas, and assume charge of the service, October 17, 1887. Granted leave of absence for thirty days, October 21, 1887.

KINYOUN, J. J., *Assistant Surgeon.*—Granted leave of absence for fifteen days, October 19, 1887.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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AMERICAN PUBLIC HEALTH ASSOCIATION.

FIFTEENTH ANNUAL MEETING.

THE ANNUAL ADDRESS.

Delivered Tuesday, November 8, 1887.

BY GEORGE M. STERNBERG, M.D.,

PRESIDENT.

GENTLEMEN: I am sure that all of the older members of the American Public Health Association feel, as I do, that our meeting this year has a special interest due to the locality in which we meet. We feel that the good city of Memphis is, in a manner, a protégé of our Association, because in her hour of distress she appealed to some of our most distinguished members for sanitary counsel and acted upon the advice given; and we recognize the fact that in more than one way our relations to this city are exceptional.

It was due to the yellow fever epidemic of 1878, in which Memphis was the chief sufferer, that steps were taken at our meeting of that year in the city of Richmond, to urge upon Congress the importance of a National Board of Health. Recognizing the fact that epidemics do not respect State boundary lines, and that an efficient sanitary service in times of emergency requires a liberal expenditure of money and unity of action on the part of sanitary officials, we urged the formation of a central health board, and for a time it seemed as if our well-meant plans would be crowned with success. Indeed, they were crowned with partial success, for all must recognize that in the early days of its existence the National Board of Health accomplished much good. It is unnecessary for me to refer to the various circumstances which conspired to paralyze the effective energy of this Board. Unhappily it is a thing of the past, and the hopes which we had founded upon this our bantling are but a memory of the past. But we should not be discouraged that our first effort has failed. A careful consideration of the circumstances which led to this failure may enable us to mature a better plan. Such a plan, endorsed by the judgment of the experienced sanitarians here assembled, and properly presented to our national legislators, could not fail to receive respectful attention.

One thing appears to me to be clearly demonstrated by the experience of the past, namely; that a central health board, to be efficient, must be attached to one of the departments of the government now in existence, so that it may be under the protection of a Cabinet officer. It would be useless to ask at the present time that the sanitary interests of the country may be represented by an additional Cabinet officer, a minister of public health, although there can be no doubt that the interests involved are sufficiently important to justify such an innovation. But we may at least demand that the sanitary interests of the people of the United States shall receive the same consideration from the National government that is accorded the educational interests, the agricultural interests, etc. We may, at least, ask for a bureau of public health, with a Commissioner at its head, and with the necessary secretaries and clerical force to make it efficient; and attached to such a bureau should be a well-equipped laboratory in which expert bacteriologists, chemists, and sanitary engineers should be employed in the experimental investigation of unsettled sanitary problems: such as the natural history of disease germs: the best methods of destroying them; protective inoculations against infectious diseases; problems in sanitary engineering, such as the disposal of sewage, domestic sanitation, etc.; food adulterations; and a variety of other questions of equal importance, which will readily occur to you. I do not approve of the plan of having a central Board of Health composed of members located in various parts of the country. Such an organization is cumbersome, and it cannot be expected that a Board which is only assembled at long intervals, and of which the members are occupied by various pursuits which claim their time and best thought, will render the most efficient service. On the other hand, by diversity of opinions they may greatly embarrass their executive officer, who must necessarily be located in Washington. Nor, in my opinion, would a Board composed of officials at the head of various departments in Washington, such as the Surgeons-General of the Army, the Navy, and the Marine Hospital Service, as has been suggested, be much better. These officials are fully occupied with the duties pertaining to their office, or at least have not sufficient leisure to undertake the executive work of a central health bureau. I would, therefore, expect better results from the untrammelled action of a single Commissioner who would be responsible directly to the Cabinet officer to whose department his bureau was attached, and would necessarily be controlled by the law defining the nature of his duties. In this case it is evident that the good accomplished would depend largely upon the fitness of the man selected for the special duties entrusted to him, and that a political appointment in the first instance, or the removal of a suitable man for party reasons, would entirely defeat our object.

We may, however, ignore this possibility, and trust to the good judgment of the Chief Executive, and the growing public sentiment in favor of retaining efficient bureau officers without respect to party changes.

In connection with the bureau of public health, it would certainly be desirable to have an *Advisory Board of Health*, to which the Commissioner could refer questions for consideration, or which could advise him of new measures, or desirable changes in his regulations, which after full discussion commended themselves to the judgment of the Board. Such a Board should have no executive power, and the members should receive

no pay, beyond their actual expenses in attending the appointed meetings. I would suggest that such a Board should consist of the Surgeon-General of the Army, the Navy, and the Marine Hospital Service, and of the Presidents of State Boards of Health. One annual meeting in Washington would probably answer the purpose for which a Board would be constituted, except in case of an actual or threatened epidemic, when it might be convened by order of the President of the United States, or the suggestion of its President or of the Commissioner of Health.

I request your careful consideration of the plan here suggested, and if it meets your approval would urge the importance of taking such action at the present meeting as will insure its being properly brought before the Congress of the United States.

My reference, at the outset of my address, to the Richmond meeting of this Association, will recall to those of you who were fortunate enough to be present at that meeting, the very great interest which attached to the reading of reports upon the epidemic of that year; and especially will you recall the scene when our lamented colleague, Dr. Samuel M. Bemiss, of New Orleans, occupied the platform. Surrounded by diagrams showing the typographical features of the towns in the great Mississippi Valley, which had suffered most from the epidemic, and with tabular statements of population, mortality, etc., Dr. Bemiss, with the clearness and precision which characterized his delivery, passed in review the terrible record of the devastating pestilence. His genial and rugged face, aglow with humanitarian zeal, and an intelligent appreciation of the sanitary lessons conveyed by the stern facts which he presented to us, made an impression upon my mind, which will not soon be effaced. Alas, that he is not here with us to congratulate the good citizens of Memphis upon the favorable change which has occurred in their sanitary surroundings since the date of which we are speaking.

Sanitarians recognize the fact that epidemics are often blessings in disguise, just as great fires may be in badly built cities. Certainly not a blessing for those who suffer directly from the scourge; but the traveller who sees broad and well-paved streets, substantial and well-ventilated dwellings, and a healthy-looking population, where formerly narrow, filthy streets, and crowded tenement houses occupied the ground, may be excused for looking upon the conflagration which cleared the way for such improvements as a blessing. So, too, sanitarians, recognizing the fact that in many instances nothing short of an epidemic will arouse the people to take action with reference to sanitary improvements, cannot fail to see that the benefits which result from an epidemic of cholera, or of yellow fever, in the long run, may more than compensate for the distress and loss of life which attend them. A cholera epidemic which decimates the population of a town without sewers or proper water supply, will prove a blessing in the end if it leads to the introduction of an ample supply of pure water and of a system of sewerage by which the mortality from typhoid fever and other endemic diseases is greatly reduced. But this mode of obtaining sanitary improvements is an expensive one, and rather hard on the victims of the epidemic.

The members of this Association, therefore, actuated by a humanitarian spirit, desire to secure these benefits for every town in this broad land if possible, in advance of the scourge which is sure to come some day, if the warnings and the lessons of past experience do not suffice to arouse the inhabitants of insanitary towns to a sense of the risks they run. It is a remarkable fact that in matters of this kind individuals and corporations are slow to profit by the experience of others, and that it is commonly only when the fatal results of neglect are brought under their immediate observation, that they are ready to apply the remedy, which is necessarily more or less expensive. We all remember how promptly the people of Memphis responded when the epidemic stimulus was applied, and we have heard much of the sanitary improvements which have been made in this city since the memorable year 1878. Many of us are here for the first time, and, as I have said, this meeting possesses special interest for us, because it enables us to see for ourselves what has been done and what remains to be done, in order to put Memphis in a state of defence in the event of another yellow fever epidemic in the Mississippi valley.

Do not allow yourselves to fall into a state of inaction and false security, because, for several years our foe has been kept at bay. Although it is now evident that yellow fever is not endemic in any portion of our land, and we have learned by recent experience that by proper measures it is possible to exclude it for a series of years even from the city of New Orleans, yet there are so many possibilities of its introduction, in spite of the vigilance of those who have charge of the gateway of the Mississippi Valley, that it would be folly to neglect those local measures of sanitation which remove the vulnerability of cities in the presence of the germs of pestilential diseases. Shutting the door is of prime importance, and while the keys are in the hands of our energetic and able colleague, Dr. Holt, we may feel comparatively safe. But the efficient President of the Louisiana State Board of Health cannot guarantee that all avenues of approach are securely guarded, inasmuch as some of these avenues are quite beyond his control. This is exemplified by the Biloxi epidemic of 1886. Local outbreaks such as that at Biloxi, and the epidemic at Key West, and at Tampa during the present year, show that the conditions upon our Gulf coast are no less favorable to the prevalence of yellow fever than they were in former years, and that our immunity depends solely upon the exclusion of an exotic germ. Unfortunately, also, the Biloxi epidemic illustrates the very greatest liability of physicians to fall into error with reference to the diagnosis when yellow fever unexpectedly makes its appearance at a place outside of its habitual range. History repeats itself in this particular. The early cases in an epidemic, which are often mild, are pronounced to be malarial fever, and this diagnosis is often sustained by those who have committed themselves to it, when no reasonable doubt remains in the minds of unprejudiced physicians as to the nature of the malady.

The question whether it is practicable to make a city which lies within the area subject to invasion, proof against epidemics of yellow fever and cholera is one of very great importance. At the International Sanitary Conference of Rome, the delegates from England and from India opposed all quarantine restrictions as unnecessary, and pointed to the fact that for years there

has been constant and free communication between cholera-infected ports in India and the seaport cities of England, but that cholera has not effected a lodgement in that country, Dr. Thorne Thorne, of the Local Government Board, a delegate to the Conference, ascribed this immunity to the sanitary improvements which have been carried out in England during the past ten or twelve years. He stated that during the period included between the years 1875 and 1884, an amount exceeding six and one-quarter millions sterling per annum had been expended in England "under private and public Acts mainly of a sanitary character." Dr. Thorne Thorne, in his report of the proceedings of the Conference referred to, says:

"Lastly, I would note that I took occasion to explain to the technical Commission, that expenditures such as I have referred to, are, with only very trivial exceptions, voluntarily incurred in the interests of public health.

"I then went on to show, in connection with this expenditure, that the average annual mortality for England and Wales was now only 19, as opposed to 22 per thousand in the decennial period 1861–70, and this notwithstanding the increase in population of some five millions; and taking the continued fever mortality of this country as that which, in point of causation, most nearly resembled cholera, I point out that whereas in the five years 1865–69, this mortality was at the rate of 934 per million living, it had steadily fallen to 428 per million during the period 1880–82, and that it was now only 307 per million."

In a later communication published in the *Practitioner* for October, 1887, Dr. Thorne Thorne gives fuller details of the English system of protection against cholera as follows: "Having deliberately abandoned the system of quarantine, we began, many years ago, to organize the system of medical inspection with isolation. The medical inspection comes first into operation on our coasts. The customs officers board the vessel coming into our ports, and they at once communicate to the sanitary authority the occurrence of any case of cholera, choleraic diarrhœa, or suspected cholera. A vessel so affected is detained until the medical officer of health has examined every member of the crew and passengers. Those actually sick with cholera or choleraic diarrhœa are at once removed to the port sanitary hospital, and any person certified to be suffering from any illness which that officer suspects may prove to be the cholera, is detained for a true period of observation, not exceeding two days. The medical inspection is thus followed by isolation of the sick. Unlike a quarantine system, this process does not interfere with the healthy, or expose them to risk by herding them together with the sick, but the names of the healthy, and the places of their destination are taken down, and the medical officers of health of the districts in question are informed of the impending arrivals. This part of our system has been named our first line of defence, but it would be of little value if we stopped there. Our main trust is in the promotion of such local sanitary administration in every part of the country as shall rid us of the conditions under which alone cholera can spread. In periods of emergency, as during the past three years, a special medical survey of such districts as are most exposed to risk is organized under the supervision of the medical officer of the Local Government Board, and, where needed, the sanitary authorities are urged to action. Important as have been the results of the recent survey, they would go for little, were it not for the steadily maintained work of sanitary authorities and their officers throughout the kingdom; and we who have been taunted abroad for opposing quarantine because its restrictions touched our commercial interests and our pockets, may justly feel proud that in England and Wales alone, the people have, during the past ten years, of their own accord, and apart from government dictation, spent by way of loan or in current expenditure, over eighty millions sterling, for purposes mainly of a sanitary character. And we may fairly ask whether any corresponding expenditure has in other countries given evidence of real faith in a quarantine system."

Without denying the value of the sanitary improvements which have been carried out in England, and the possibility that her immunity from cholera is largely due to them, the delegates from more exposed countries, such as France and Italy, demanded a quarantine station on the Suez Canal, and pointed out the fact that their seaport cities were not in such a sanitary condition that they could hope to escape the ravages of the pestilence in case of its introduction, and that to place them in such a state of defence would require time and the expenditure of large sums of money. It was noticeable that those countries, such as Turkey, Egypt, and Spain, where sanitary improvements have made the least progress, were the most exacting with reference to quarantine restrictions. They evidently looked upon these as their only hope, and were advocates of the old-fashioned time quarantine, which, as carried out in these countries, has often been attended with barbarities which are intolerable for civilized nations. Self-preservation is, indeed, the first law of nature, but it is barbarous to sacrifice the life of another to save our own, and in guarding the lives of a community, we are bound to show due consideration for the health and comfort of those who are believed to be the possible bearers of disease germs.

Recognizing this humane principle a majority of the delegates to the Sanitary Conference of Rome were anxious to effect a compromise between the old-fashioned time quarantine and the English practice, which they could not rely upon for the countries of Southern Europe. It was believed that such a compromise was practicable, and that the plan agreed to by a majority of the delegates present was more reliable than a simple quarantine of detention. I must refer you to the published transactions for the details of this plan; but, in brief, it consisted of a sanitary supervision of ships at the port of departure, when this was an infected port, or in communication with an infected locality; in the sanitary supervision of ship and passengers while in transit by a properly qualified physician upon all passenger ships; and in such detention at the port of arrival as might be necessary for the disinfection of the ship, the personal effects of passengers, etc. If one or more cases of cholera should appear on board during the voyage, they were to be isolated and rigid measures of disinfection carried out, and the action of the health authorities at the port of arrival was to depend largely upon how effectively this had been done. In short, the treatment of the vessel and its passengers was not to be

determined in advance by arbitrary rules, but was to be governed by an intelligent consideration, by an expert, of all the circumstances relating to the sanitary history of the ship from the date of its departure from the infected port. This rational quarantine service, which is far less burdensome to the commerce of a country than the arbitrary time-quarantine of former days, has proved itself to be also more effectual in accomplishing the end in view. This is amply proved by recent experience in our own country, where, to a large extent, the principles indicated control the action of the health officers of our principal seaports. Look at the city of New Orleans, where epidemics of yellow fever were formerly so frequent as to lead to the belief that the disease was endemic, and a necessary evil appertaining to the situation of the Crescent City. Happily, under an efficient quarantine service she has now a record of seven years' exemption from the dreaded pestilence.

It is, perhaps, too soon to speak with confidence with reference to the action taken by the sanitary officials of the port of New York upon the recent arrival of two cholera-infected vessels from the Mediterranean, but we have good reason to hope that the measures taken will prove sufficient, and that this pestilential disease, which has for several years been threatening us from a distance, has not effected a lodgement upon our shores.

Whether it would be practicable to put our seaports in such a state of sanitary defence that it would be safe to open the door and defy the foe is extremely doubtful. I have never believed that yellow fever was excluded from New Orleans, in 1862 and 1863, by the sanitary regulations enforced by General Butler, as has been claimed. The exemption from this disease enjoyed by the unacclimated soldiers of the North, who filled the hospitals in that city at the time mentioned, was due, in my opinion, to the absence of commerce during the military occupation of the city and the rigid enforcement of quarantine restrictions.

But I do believe that this and other cities similarly located can be preserved from such devastating epidemics as have too often occurred in the past, and that by the carrying out of needed sanitary improvements, and the constant supervision of expert sanitary officials supported by an enlightened public sentiment and sufficient appropriations, the ravages of pestilential diseases may be restricted within very narrow limits.

As regards cholera, the system of local defence is even simpler than in the case of yellow fever. Ample evidence demonstrates that the epidemic extension of this disease depends largely, if not exclusively, upon the water supply. Where this is subject to contamination by the discharges of the sick, there cholera is liable to become epidemic. On the other hand, cities like Rome, in Italy, which have an ample supply of pure water, drawn from a source not liable to be contaminated, seem to be cholera-proof, notwithstanding the filth and squalor in which a considerable portion of the population live. The same thing is seen in Naples, which, in 1884, suffered terribly, but which, since the completion of its new system of water-works in 1885, has enjoyed a comparative immunity, notwithstanding the fact that cholera still prevails in Italy, and that we have evidence of its presence in a malignant form in the city referred to. When I was in Naples in 1885, the Mayor of the city invited a number of the delegates to the Sanitary Conference to the municipal palace, for the purpose of conferring with them in reference to projected sanitary improvements, and especially with reference to the best system of sewerage for the city, which, up to the present time, remains destitute of sewers, and which, I may add, is a noted stronghold of typhoid fever. In the course of the conversation I suggested to the Mayor Colonel Waring's American system, which has been tested with such favorable results in this city. My recommendation was sustained by the distinguished German bacteriologist, Dr. Robert Koch, who was one of the delegates present. I may remark that I have recently received a letter from Dr. Koch asking me to give him full particulars with reference to the details of this system as carried out in the city of Memphis.

I am not willing to leave the subject of quarantine, to which I have briefly referred, without placing myself upon record with reference to a matter in connection with it, which I consider one of the greatest importance. The practice which has come down to us from former times, when questions relating to abstract justice and individual rights had but little consideration in face of a danger to the community, of taxing commerce for the support of quarantine establishments, I consider one that is wrong in principle and unjust to those who are required to bear the burden. It seems to me to be evident that the people protected should pay the cost of such protection, and that quarantine establishments should be supported at the expense of the National Government, or of the States in which our seaports are located, and not by a tax upon the shipping entering these ports. I am not so much concerned, however, with the unjust tax upon ship-owners as with the gross injustice to passengers, practised at many ports in various parts of the world, when they are so unfortunate as to be detained at a quarantine station. Humanity demands that a sick person who is detained for the protection of a community should receive the best possible care, and justice requires that both sick and well, while detained at a quarantine station, should be well fed and well lodged without expense to themselves. Moreover, at a quarantine establishment which is supported by a tax upon ships and upon the passengers detained, an unscrupulous official may add to the hardships of passengers, the barbarity of an unnecessary detention from a venal motive. I trust that such things do not happen in our country; but to show how unjust the principles of taxing the passenger for his support while under detention in quarantine is, I will mention a circumstance which recently fell under my own observation:

When I left Brazil, in the month of August last, smallpox was epidemic both in Rio de Janeiro and at Para. Our ship touched at Para and five days later at Barbadoes. A passenger for this port was not allowed to land, because of the prevalence of smallpox in Brazil. Proceeding to St. Thomas, less than two days' sail from Barbadoes, our passenger was again refused permission to land, except to go to the quarantine station for a certain number of days. This was all right; but the conditions upon which he would be received seemed to me to be all wrong. Either he himself or the ship must guarantee the payment of the quarantine fees, which would be $3 a day for his board and $5 a day to the quarantine physician if he were alone. If others were at the station at the same time, this fee would be divided

between them. One can easily imagine what a hardship such a tax would be for a person of limited means, who had only provided himself with funds for the journey he had undertaken. The agent of the ship refused to take any responsibility, and our passenger had no resource but to submit to the imposition or to come to New York, paying his passage to that port.

As another illustration of the evils arising from the present system of supporting quarantine establishments, I will mention a circumstance which occurred upon our arrival at the port of New York. With the Deputy Health Officer who boarded our ship came a man with a jug. I was informed by one of the officers of the ship that he was to disinfect the vessel. Being somewhat curious to know the method of disinfection employed, I asked the ship's surgeon to go with me to inspect, when, after a detention of less than one hour, we had started from the quarantine station for our wharf. We found that the man with the jug had lowered a bucket by means of a rope through one of the hatches between decks. Upon pulling up this bucket, I found that it contained two or three pounds of some powder which had been wet, probably with an acid solution, and which gave off an odor of chlorine. No doubt, when first lowered between decks, there had been a considerable evolution of chlorine, but in the vast space to be disinfected it was so diluted that, at the end of an hour, I did not detect the odor of chlorine gas when I lifted the hatch, and it was only by approaching my nose to the bucket that I was able to ascertain what disinfectant had been used. The most curious part of the story is that I was informed that the bucket had been lowered between decks to disinfect a quantity of hides which were stored in the hold. What was the object of this "disinfection"? Evidently not to disinfect, for no one at the present day would think of maintaining that the hides in the hold had been disinfected by the procedure of the man with the jug.

The only object that I can conceive of depends upon the fact that there is a fee for disinfecting, which must be paid by the agents of the ship; at least I was so informed by one of the officers of the ship.

Gentlemen, we cannot control the action of sanitary authorities abroad, and, if we are ever so unfortunate as to be thrown in a lazaretto in one of those countries where the rights of the individual are counted as nothing, God pity us, for the fact that we are American citizens will be of no avail. But we can at least correct abuses, if such exist, at our own seaports, and set an example to other nations of an enlightened policy, which will not only redound to our credit, but will directly benefit our languishing commerce.

The most enlightened nations of Europe recognize the importance of a uniform system of quarantine administration, based upon past experience and recent progress in sanitary science, and this has been one of the principal objects in view in the assembling of expert delegates from the various countries interested for international sanitary conferences.

The first International Conference was that of Paris, in 1852. A second Sanitary Conference assembled in the same country in 1859, for the purpose of revising and simplifying the conclusions adopted in 1852; the next Conference was that of Constantinople, in 1866, and this, like the last Conference assembled in Rome in 1885 at the call of the Italian Government, followed immediately after an epidemic of cholera, and had special reference to the restriction of this disease. The Conference at Vienna followed in 1874, and that of Washington in 1881. The latter, following after our yellow fever epidemics of 1878 and 1879, had the special object in view of establishing an international system of notification of the appearance of epidemic disease in all parts of the civilized world, and of the sanitary condition of seaport cities, and especially of ships sailing from infected ports.

Unfortunately, all attempts to establish an international code of quarantine regulations have thus far failed, owing to the very diverse opinions held by the delegates from the several nations who have been assembled for this purpose, and to the conflicting interests of some of the great powers. While, as a nation, we have taken part in these sanitary conferences, and have advocated an enlightened and uniform policy of quarantine administration, and international notification of infectious diseases, we have as yet no uniformity in the quarantine regulations of our own seaport cities, and no central health bureau. Gentlemen, it is well for us to consider these matters, and to point out to our legislators the present unsatisfactory condition of affairs with reference to the subjects referred to.

(To be concluded.)

ORIGINAL ARTICLES.

INJURIES OF THE FŒTUS DURING LABOR.[1]

By THEOPHILUS PARVIN, M.D.,
PROFESSOR OF OBSTETRICS IN JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

Though injuries of the child during labor are not frequent, probably they are much less rare than commonly believed. In many instances they are not recognized immediately after delivery, and they may spontaneously disappear, and in some their consequences are attributed to erroneous causes. Some of these lesions may happen in spontaneous labor, and others in artificial, whether the interference be manual or instrumental. It is impossible to classify them according to their causes, and apparently the most satisfactory division is one resting upon the regions or parts affected. Hence, in the paper now presented, injuries to the fœtus in labor will be divided into those involving the head and neck, those of the trunk, and, finally, those of the extremities.

Injuries of the head and neck.—Contused wounds of the scalp and of the face, and incised, punctured, and lacerated wounds of the former are met with. So far as contused wounds of the face are concerned, it usually happens that they follow difficult delivery with the forceps, especially if the instrument be a powerful compressor; so, too, these result if the blades are applied obliquely, or antero-posteriorly to the head instead of to its sides. But in most all cases the effects are trivial and soon disappear. Punctured and incised wounds of the scalp have been made by the obstetrician mistaking a caput succedaneum for

[1] Read before the Philadelphia County Medical Society, October 26, 1887.

the fœtal skull. Turnier mentions an instance of a wound thus inflicted leading to the death of the child from erysipelas a few days after birth. More extraordinary is a lacerated wound of the scalp made in the effort to apply forceps, the operator introducing one of the blades between the scalp and the cranial bones.[1] An example of this terrible blunder is mentioned by Chaussier,[2] and I have met with a similar case.

Sloughing of a portion of the fœtal scalp has been observed following some cases of spontaneous labor.

Thus, Prestley[3] has reported a case of this kind, resulting in death eight days after delivery; the labor was protracted for forty-eight hours because of a narrowed pelvic outlet. Lizé,[4] of Mans, states that in the case of a multipara, forty years of age, the waters ruptured five days before the birth of her child, which presented by the vertex, but occupied an occipito-sacral position. Five days after delivery, a slough involving almost the entire extent of the occipital bone appeared; three days subsequently it became detached and the child recovered. Bouchut quotes from Lorain a case of gangrene of the scalp in a newborn child occurring in the service of Moreau at the Maternity. The mother was a primipara, and the labor lasted forty-eight hours, terminating spontaneously; the child died on the nineteenth day. Dr. Goodell informs me of a case in which an oblique application of the forceps was made—one blade being in relation with the right frontal bone, and the other with the left occipital—and the right anterior portion of the head was so bruised that sloughing occurred a few days subsequent to birth; after the detachment of the slough a fatal hemorrhage occurred.

Depressions and fractures of the cranial bones, separation of their union to each other, fractures of the bones of the face, as well as disjunction of their articulations and joints, have been observed more or less frequently in cases of difficult labor, manual or instrumental—some of them, indeed, in spontaneous labor.

In regard to depressions of the bones of the fœtal skull, some obstetricians have asserted that they are always accompanied by fractures. That was the opinion of Danyau, of Lachapelle, and of Schröder. But the following case,[5] given by Matthews Duncan, seems to strengthen the view held by most obstetricians, that such depressions may occur without the bone involved being broken. The case was one in which persistent digital impression was produced on the right parietal bone of a fœtus during birth, by the finger of the accoucheur, who was endeavoring to cause rotation. The result was slight, short, but frequently repeated epileptiform seizures, which lasted some time after the digital impression had disappeared, and were finally replaced by choreic movements. Now it seems hard to conceive that the pressure of the finger produced a fracture of the bone. Dugès[6] has given a history of great depression in one of the parietal bones, not followed by any serious consequences. The child was delivered by the feet through a pelvis of which the conjugate was estimated at three inches and a quarter. Powerful traction upon the shoulders and upon the lower jaw was necessary to bring the head past the obstruction, and the parietal bone, which was in relation with the sacro-vertebral angle, presented a depression half an inch in depth and two inches in breadth. The infant was resuscitated with difficulty, then had convulsions, but in a few days was quite well, and in fifteen days the depression had entirely disappeared.

Minor depressions or indentations are sometimes seen, especially after the application of the forceps, and in rare instances such marks are permanent. But we must not be in haste to conclude that these indentions found upon the head of a newborn child are proofs of instrumental delivery, for Osiander[7] has stated that, having delivered a child by podalic version through a narrow pelvis, he found upon its head a depression into which the end of a forceps-blade accurately fitted; so that he himself would have concluded, had he ever seen a similar depression, that the delivery had not been spontaneous, but by the forceps.

Fractures of the fœtal skull have been observed as the result of direct violence, as when a woman expels her child while she is standing, and it falls on the floor. Or, again, a woman,[8] near the close of the second stage of labor, the child's head being at the vulvar opening, threw herself out of the window, and several fractures of her limbs, as well as a fracture of the child's head, resulted. But apart from these cases in which the injury has resulted from direct violence, and those observed in delivery, whether spontaneous, manual, or instrumental, in narrowed pelves, which will be referred to in a moment, fracture may occur when the labor is in all respects perfectly normal, so far as duration and facility are concerned. Thus, Dr. Charles West[9] has reported the case of an infant dying from convulsions nine days after birth, the labor having been an easy one and lasting but five hours; the mother had previously given birth to two living children, and these labors too had been normal. Yet upon an autopsy of the third child, a fracture of the right parietal bone, with effusion of blood between the cranium and dura mater, the effusion being more than half an inch thick and occupying the entire fossa of the bone, was discovered. He states in his report that fractures of the skull have been known to take place during easy labors, and wholly independent of any preternatural degree of ossification of the skull. Monteith[10] mentions having attended a case of perfectly natural labor, yet the child had a fracture of the right parietal bone; there was a

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[1] Gazette Médicale de Strasbourg, 1844.

[2] Art. Accouchement, Dictionnaire de Médecine, 2e Edit.

[3] Lancet, London, 1844.

[4] Archives Générales de Médecine, 4e Série, etc.

[5] Edinburgh Monthly Journal of Medical Science, 1850.

[6] Traité Théorique et Pratique de l'Art des Accouchements. Paris, 1826.

[7] Gratz, in Casper's Wochenschrift, 1839. Osiander gives forty cases of fracture, division, or effusion of the bones, later than of mere depression of epiphyses, etc., occurring in labor. He also reports two of rupture of the longitudinal sinus.

[8] Quoted by Dewees, Practice of Midwifery, 1840.

[9] Transactions of the London Medico-Chirurgical Society, 1845.

[10] London Lancet, November 14, 1874.

marked depression in the middle of the bone, and the fracture extended to the sagittal suture on one side, and to the coronal on the other. It is quite apparent that a case such as either of these might give rise to medico-legal investigation, or to unjust censure of the obstetrician.

Coming down to fractures of the bones of the cranium or face, or rupture of joints involving the maxillary symphysis, or the cervical vertebræ, or fracture of a vertebra, for it is claimed that usually the body of one is broken rather than a separation between two vertebræ, as the consequence of great traction occurring in manual or in instrumental delivery, an important question arises as to the amount of force that may be safely used either with hand or instrument. In illustration of the great force which has been employed in forceps delivery without injury to mother or child, I quote the following from Dr. Peugnet.[1] He states:

"I was called to Mrs. K., a multipara, in labor with her third child. The first two were delivered by craniotomy. The vertex presenting, R. O. A., and impacted between the sacrum and the pubes, the conjugate diameter of the superior strait greatly contracted, I applied forceps, and had great difficulty in locking them. Dreading the laceration which might ensue in this case from side-to-side lever action, I concluded to rely upon direct and steady traction. My strength giving way, her husband held me round the waist, whilst the patient was held *in situ* on the dorsum by four women. In forty-five minutes I had the satisfaction of bringing the head down upon the perineum. The delivery was then speedily accomplished. Both mother and child, a girl, did well."

The least that can be said in regard to this case is, that the result was very remarkable, and it is doubtful whether the practice pursued could be repeated in any considerable series of similar cases without injury to both mother and child.

Delore,[2] after remarking that the fœtal head may endure, without injury, a great compressing force if applied to a large surface, and if made by a regularly concave surface, as that of the blades of the forceps, states that from his experiments he found that a compressing force of two hundred and twenty pounds did not cause a fracture. But, on the other hand, if the blades slip, if the pressure is made upon a small surface, fracture follows the exercise of much less force. Further, a blunt, angular body, such as the sacro-vertebral angle, the spherical surface of which is described by a radius of three-fourths or one inch, produces a fracture with a force of forty-four pounds. As the force which is exerted in difficult labor is more than forty-four pounds, fracture results.

Nevertheless, these results are not in complete accord with those of Goodell,[3] though, as will be seen, he is discussing the question of the amount of force of traction that may be safely used in a narrowed pelvis without injury to the neck of the child. Nevertheless, the subject of injury to the bones of the head is also involved, and in only one instance, I believe, does he mention fracture of one of the cranial bones. He states that he has on several occasions delivered living children after throwing on their necks a weight of 130 pounds. He further says that, although exerting all the manual strength at his command, he has never seen the body part from the head; he mentions one instance in which there was not the slightest apparent injury to the neck though the sacral side of the head had been broken in. Further, in another case, the force of traction upon the child's head, combined with suprapubic pressure, amounted to 200 pounds. Stone[1] has more recently reported a case of podalic version, and delivery by traction through a narrowed inlet, in which he put on the neck of the child all the force of which he was capable, using the pump-handle movements described by Goodell. The child was dead. There was no fracture of the bones of the head.

"The spine had parted in the upper dorsal region during the traction upon the trunk, which was necessary to cause the shoulders to come low enough to reach the arms. The cervical spine was not broken."

Delore's conclusion as to the amount of force followed, in pelvic narrowing, by fracture of the cranium of the fœtus is erroneous, or such injury ought to have been observed in all the cases where a force even approaching 100 pounds were used.

Champetier's[1] investigations as to the force that could be safely used in the delivery of the fœtus, led him to the following conclusions, the first of which does not correspond with the results obtained by Goodell: First, there is danger of fracturing one of the parietal bones, whatever the method of extraction, if the total force employed reaches seventy-five to eighty-eight pounds, the infant being at term, forty-four to fifty pounds if it be premature. Second, the inferior maxillary of a child at term will bear, without rupture, a traction of fifty-five pounds. Third, the vertebral column of an infant at term was ruptured in three cases by a force of one hundred and ten pounds.

So far as objected that these results have been obtained by experiments upon dead children, and, therefore, they are not applicable to the force that may be exerted upon living ones, the answer of Matthews Duncan may be repeated. He, after consulting physiological and physical authorities, could say that a child living and one recently dead were the same as to tensile strength.

In this connection it is well to refer to the amount of traction which may be safely applied to the lower jaw of the fœtus, as stated by Duncan[2] from his own experiment. It will be observed that his results are not the same as those announced by Champetier. Duncan states: "It is now ascertained that a force of half a hundred weight (fifty-six pounds) may, at least in some cases, be applied by dragging the lower jaw of the fœtus without producing any easily discovered injury of the parts." He further says that compound dislocation would be almost certainly

[1] Ohio Medical and Surgical Journal, 1878.
[2] *Op. cit.*
[3] American Journal of Obstetrics, 1875.

[1] Medical and Surgical Reporter, February, 1880.
Du passage de la tête fœtale a travers le détroit supérior rétréci du bassin.
[2] London Obstetrical Society's Transactions, vol. xx.

fatal, and in one of his experiments this injury was done by a weight of fifty-six pounds. Not only does Duncan's statement as to the force which the inferior maxillary will bear without injury differ from that of Champetier, but the difference is still greater from that given by Delore, who makes this eighty-eight pourds.

Fractures of the cranium usually involve the parietal bones, but they may also occur in the frontal, in one of the temporals, or in the occipital. Jacquemier first pointed out the separation between the squamous and the basilar portion of the occipital bone, to which some more recent writers[1] have directed attention without giving him just credit. He has also stated that he met with fracture of the occipital in that part of the bone above the protuberance.

Ruge,[2] referring to separation of the epiphyses between the squamous portion of the occiptal bone and the articular part, states that Schröder is the only one who has recently drawn attention to it, and, notwithstanding its importance in regard to the life of the child, this lesion is not referred to in classic works as one of the immediate consequences of extraction. The lesion may also occur in a narrowed pelvis, though the presentation be cranial. In these cases there may be not only effusion of blood, but further compression by the squamous portion having its anterior inferior margin forced against the medulla.

On the other hand, severe injury of the frontal bone has been observed without serious consequences. Thus, Dugès saw a child recently delivered, and the left eye was almost completely outside the orbit, so great was the depression of the frontal bone, yet the infant did not have convulsions or any other grave symptoms. I have, however, seen protrusion of the eyeball in a newborn, following fracture of the frontal bone by Hodge's forceps, used in a case of tedious labor in a primipara, the delay being from an occipito-sacral position; the child lived for a week after birth. That an infant may survive very grave injuries in labor is proved by a case reported by Lamotte,[4] in which a surgeon, in a case of shoulder presentation, had torn away the arm, and then performed craniotomy, evacuating a large amount of the cranial contents; yet the child was born alive.

Zweifel[5] regards fissures and fractures of the cranial bones as only of clinical signficance if a sinus be injured and consequent hemorrhage occurs. On the other hand, Delore[6] asserts that all these fractures are grave, on the ground that they may be accompanied by contusions of the brain. Further, there may be hemorrhages between the bone and the periosteum, in the cavity of the arachnoid, or between the pia mater and the brain. If the solution of continuity be at the position of a sinus, there is frequently rupture of the vessel. He adds that in all cases in which the head has undergone severe compression from dystocia, he believes hemorrhages occur. The significance of this last remark will be appreciated, especially when we consider the remote consequences upon the mental condition of the child, as urged more especially by some English observers.

Injuries to the bones of the face are usually of the inferior maxillary. This bone may be fractured, or separation of the mental symphysis may occur. Ruge mentions cases in which, in addition to injury of the bone, there were lesions of the soft parts—as, for example, tearing of the skin at the angle of the mouth, as well as the mucous membrane of the pharynx and rupture of the genioglossus. Yet if we fail to use traction upon the lower jaw in cases of difficult head-last labors, we miss what may prove an important means of delivery in some cases, and which may be of great value when other means fail. Some years ago, in a case of narrowing of the pelvic inlet, having failed to deliver with forceps, I performed podalic version, and sought to deliver by traction, while a consultant aided with suprapubic pressure. I am confident I did not use the force which some operators have safely employed under similar circumstances, yet the cervical vertebræ gave way, either by separation, or by fracture, and I found apparently nothing but the integument holding the head to the body. I then succeeded by traction upon the inferior maxilla, suprapubic pressure assisting in bringing the head into the pelvic cavity. That the head may be left in the uterus, the body being dragged away, is a fact proved by occasional instances in the history of obstetrics. In other cases the division has been made, not by rupture, but by cutting through the neck. An instance is reported[1] in which the obstetrician failing to deliver the head in a case of shoulder presentation, after detaching the arm and bringing down the feet, performed decollation, and the head and the placenta remained in the uterus for forty days. Freund mentions a case in which the head was left in the uterus for ten years.

Probably the most remarkable case of multiple injuries to the face has been recorded by Petit.[2] The face presented, rupture of the uterus occurred, and the woman died undelivered, though the forceps had been used. The autopsy of the child showed multiple separations of the bones of the face, and fractures.

Paralysis of one of the facial nerves has been observed most frequently, but not exclusively, after the use of the forceps. In a paper read before the American Gynecological Society in 1885, I have referred to eight cases of spontaneous facial hemiplegia, and also mention one case observed by Seeligmüller, in which the paralysis affected both sides of the face. But the disorder usually occurs from the use of the forceps, and is caused by the pressure of one of the blades at the stylomastoid foramen, or a little in front of the lobe of the ear. Landouzy, who has best described the affection, has remarked that in the infant the complete absence of the mastoid apophysis, and the slight development

[1] Thus Bednar, Die Krankheiten der Neugeborenen und Säuglinge, Wien, 1853, refers to it as a hitherto unobserved injury.
[2] Bulletin de Therapeutique, from Zeitschrift fur Geburtshülfe und Frauenkrankheiten, 1875.
[3] Jacquemier, op. cit.
[4] Traité des Accouchements, 1726.
[5] Lehrbuch der Geburtshulfe. [6] Op. cit.

[1] Obstetric Gazette, from Archiv für Gynäkol., March, 1883.
[2] Annales de Gynécologie, 1874.

of the auditory canal, favor the possibility of this compression of the facial nerve near its point of emergence. In six weeks, according to Parrot and Troisier, recovery usually takes place in paralysis of the facial caused by forceps. Many cases, however, are well in ten days. Nevertheless, while recovery is the rule, it should be remembered that in some the injury is permanent. Duchenne[1] refers to two patients, one fifteen years old, and the other five years and a half, in each of whom the paralysis continued.

It should also be observed that there may be facial paralysis in the newborn caused by protracted labor and intracranial hemorrhage. Injuries of the sterno-cleido-mastoid muscle have been observed by several. In reference to torticollis of obstetric origin, Stromeyer and Dieffenbach explained the affection as resulting from improper application of the forceps, the muscle being bruised or torn. Nevertheless, this explanation is rejected by Saint-Germain as not plausible. A very large proportion of infants that have wry-neck, are born with pelvic presentation, and it is asserted that in the traction exerted rupture of a greater or less number of the fibres of the muscles takes place, and a hæmatoma follows; finally, the contractions of the cicatricial tissue result in drawing the head into its unnatural position. One of the first references to tumors of the sterno-cleido-mastoid was made by Melchiori[2] in 1862. He spoke of them as indurations of muscle, sometimes met with in young infants, and to which he found no reference in authors. He met with the disorder four times, and he described the affection as an indurated, plastic deposit; while he mentions temporary deformity of the neck, he does not speak of any case in which this was permanent. In referring to the etiology, he suggests that compression of the muscle or laceration of some of its fibres may take place during labor.

The next year both Dr. Wilks and Sir James Paget[3] met with cases of what they described as chronic induration of the sterno-cleido-mastoid. Another case of the affection was reported the same year by Harris, and thus the published cases in a few months were at least six, but no reference was made by any of the reporters to the previous observations of Melchiori. Bryant[4] in 1863 reported two cases of thickening of the sterno-cleido-mastoid. One patient was four, the other eight weeks old when he saw them; in each instance the birth was with pelvic presentation. Probably in all the cases, or at least in a majority of them, the disease was hæmatoma. Nevertheless, Blachez[5] regards these tumors as caused by an interstitial myostitis in consequence of traction upon the muscle. He describes the tumor, observed in one of his patients, as elastic, almost painless, and the size of a pigeon's egg; it was situated in the right sterno-cleido-mastoid, and was not discovered until two or three weeks after birth, when the attention of the parents was called to it by the infant's keeping the head inclined to the right side.

[1] See Nadaud, Des Paralysies Obstétricales des Nouveau-nés.
[2] Medical Times, London, vol. ii., August 9, 1862.
[3] London Lancet, 1863, vol. i. pages 11, 236, and 313.
[4] London Medical Times.
[5] Gazette Hebdom., May 19, 1876.

Zweifel recognizes injuries of the sterno-mastoid muscle in labor as a cause of torticollis. Professor Albert,[1] of Vienna, referring to a child with torticollis, stated that the sterno-cleido-mastoid may become contracted during intrauterine life, or be injured during birth. In breech presentations, and in difficult forceps delivery a laceration of this muscle may occur, and be followed by inflammation and contraction. While such injury is more frequent after head-last labors, yet they are also met with in vertex presentations, and if the forceps have been used.

On October 2, 1861, a paper was presented to the London Obstetrical Society by Dr. Tyler Smith for Dr. W. J. Little, the title being "Upon the influence of abnormal parturition, difficult labors, premature birth, asphyxia neonatorum, on the mental and physical condition of the child, especially in relation to deformities."[2] In this paper, which, by the way, mentions two cases of wry-neck, that he attributed to difficult labors, the author says:

"It is impossible to connect the persistent affections of the intellect, of volition, and of organic life, with the injury the several nervous centres suffered in some instances before the fœtus had reached the maternal pelvis, in others whilst in transit through it; and in a third set of cases, where the fœtus was exposed to neither of these kinds of injury, it suffered from asphyxia neonatorum, suspended animation, and its concomitant congestions, effusions, capillary apoplexies of the brain, medulla oblongata, and spinal cord."

Dr. Langdon Down, in discussing the obstetrical aspects of idiocy, stated that in a very large number of cases of idiocy the subjects were born after difficult labors, these being usually tedious, and he held that if a neurotic tendency was present the tedious labor and suspended animation might determine the catastrophe, where otherwise all might have gone fairly well.

The following note from one of Dr. Little's[3] correspondents may be of some interest; it is in reference to a young man in regard to whom inquiry had been made by Dr. Little:

"I have again ascertained he was asphyxiated for two hours when born, and that he has always been a weak creature, very slow in mental development, with difficulty in speaking, trembling and shaky, unable to fix his attention on a book, and a bit of a punster."

The final statement, "a bit of a punster," is conclusive as to the intellectual feebleness of this unfortunate man!

These views are further strengthened by the statement of Dr. Arthur Mitchell[4] that he believes there is a connection between difficult labor and idiocy.

Injuries of the trunk.—The chief lesions of the trunk are rupture of the connections between the dorsal vertebræ, or fracture of one of these, injuries to the abdominal wall by a badly directed blunt hook, effusion of blood in muscles, similar to those that have been referred to as occurring in the sterno-cleido-mastoid, retropleural hemorrhages along the spinal column in case rupture of this column occurs, hemorrhage in the abdominal or thoracic cavity, and

[1] Obstetric Gazette, September, 1882.
[2] Obstet. Society's Transactions, vol. xviii.
[3] Obstetrical Transactions, vol. iii.
[4] Medical Times, 1862, 1863.

collections of blood beneath the capsule of the liver, or of the kidneys, and rupture of the sacro-iliac joint. Hagen has collected forty-four cases of injuries to the fœtus occurring in extraction after version, and twenty-nine of injuries in pelvic presentations; in the former there are three of rupture of the sacro-iliac joint. It is probable, as suggested by Zweifel, that some cases of ankylosis affecting this joint, of which the etiology is obscure, are to be attributed to injury in birth. Zillner[1] has reported a rupture of the sigmoid fissure occurring in labor.

Injuries of the arms.—In connection with these lesions those of the scapula and clavicle, which belong to the arms rather than to the trunk, will be considered. Before states that fractures of the humerus are more frequent than all others; since they are usually readily cured, and as they are generally caused by *malpraxis* they are rarely published. But he further says that this accident may occur in the hands of the most expert accoucheur if the pelvis be contracted. They most frequently occur in the disengagement of the arms after podalic version when extraction is necessary, and they may also happen in pelvic presentations, but usually, if we do not have to extract the child—that is, if the cephalic can be left solely to nature—the arms will not ascend, but remain applied to the chest. Smellie[2] states that he fractured the humerus in a case in which he turned and delivered by the feet, and this is the only one he gives, while he mentions three cases of fracture of the femur, two occurring in the practice of his assistants, and one in his own.

All obstetricians agree that in bringing down an ascended arm it is important no pressure be made until the internal angle of the elbow is reached, and that three or four fingers should be employed, and not one or two. Pajot regards it as important that the posterior arm should be liberated first. Küstner[3] describes separation of the epiphysis of the head of the humerus from the diaphysis as one of the injuries of labor which may be overlooked, or falsely regarded as a luxation, fracture of the neck of the scapula, or injury to nerves. Fractures of the clavicle, separation from its sternal attachment, transverse fracture of the scapula, separation of the epiphysis of the neck of the scapula, injury of the acromion process, and dislocation of the humerus, have been observed.

Fracture of the clavicle is most frequently caused by pressing directly with one or two fingers in the endeavor to bring the head through the pelvic inlet after podalic version, or in pelvic presentation. McClintock, in one of his annotations to the Sydenham Society's edition of "Smellie," observes, "Although Smellie gives no example of fracture of the child's clavicle during delivery by the pelvic extremities, yet, in my experience, it is a bone very apt to be broken by the manipulations of the accoucheur, more so even than the humerus; this may, perhaps, be explained by its greater degree of ossification."

Paralysis of the arm.—Sinkler recognizes hemiplegia as, in some cases, the consequence of injury at the time of birth, either from the forceps or from the pressure of a prolonged labor. Nadaud gives seven cases of paralysis of the arm attributed to the forceps; the first one of this injury reported is one of Smellie's. Jacquemier mentions an instance of paralysis of the deltoid following a long and difficult, but spontaneous, labor; the recovery was complete in fifteen or twenty days. He attributed the disorder to compression of the axillary nerve against the humerus at the point of its attachment to the deep face of the deltoid. Fasbender found a tumor, as large as a pigeon's egg, situated above the right clavicle, in an infant soon after delivery; the hæmatoma gradually disappeared, but at first there was paralysis caused by nerve compression. Delore suggests that paralysis may be caused by the rupture of a nerve trunk near its connection with the spinal cord. He states that this accident is not rare in the newborn or in young infants as a consequence of traumatism; it is followed by incurable paralysis, which is compatible with life if an upper member only is affected.

Disengagement of the extended arms in pelvic deliveries, traction upon the axilla in delayed delivery of the body in vertex presentation, the traction in some cases being with the blunt hook, in others with the finger, have resulted in paralysis of the arm. So, too, the same disability has followed a case in which the arm has protruded in the shoulder presentation, and delivery effected by podalic version.

Luxation of the humerus has, in some instances, been mistaken for obstetric paralysis. Further, it is important to distinguish between cerebral and traumatic paralysis. Duchenne[1] gives an instance in which there were both cerebral and obstetric paralysis, the latter consequent upon a fracture of the ulna near the elbow.

Fractures of the femur may be spontaneous, or consequent upon artificial delivery. Meyer has recently[2] reported two cases in which spontaneous fracture of the femur was observed; in one a single femur was broken, but in the other both femurs. In May, 1847, Dr. Vanderveer[3] reported a case of such fracture in childbirth. But probably more fractures of the femur are to be attributed to the attempt to pull down a lower limb in pelvic presentation when the presenting part is already partially in the mother's pelvis, before pressing up that pre-

[1] Centralblatt f. Gynäkol., 1885.

[2] Sydenham Society's edition of Smellie's Midwifery, vol. iii., pp. 200, 208. The great obstruction in the first volume, op. cit., occurs in "In consequence of preternatural cases, when considerable force has been used in delivering the child, the whole body ought to be examined, and if there is any ink or contusion on the head or neck (supposing it presented with point on), and gently rubbed off or dissolved with the ball or touch of a handkerchief, if any limb is dislocated or broken, it ought to be reduced immediately; luxations, though [illegible] are, of more difficult reduction, for the soft parts about the joint, the humerus being easily dislocated, and [illegible] dislocations. The bones of the arm and thigh are more subject to be fractured than any other of the extremities. The first is easily cured, because the arm can be kept from being moved, but a fracture of the thigh-bone is much more troublesome case, for notwithstanding all the difficulty of keeping the bones in proper situation, the parts often necessarily moved in curing the child."

[3] Ueber die Verletzungen der Epiphysenfugen des Kindes.

[1] See Nadaud, op. cit.

[2] Archiv f. Gynäkol.

[3] New York Medical Journal.

senting part, or from the use of the blunt hook. Delore's experiments show that with the untired finger traction to the amount of thirty-three pounds may be made upon the groin, and this cannot break the femur. If a force of one hundred and twenty pounds is employed upon the femur, fracture occurs; if the instrument be perpendicular to the bone, the latter gives way with a pressure of forty-four pounds. Again, the bone has been broken, or that which is equivalent, separation of the epiphysis been caused from traction upon the leg. A. R. Simpson mentions an instance in which, podalic version having been performed, the right lower limb was brought down, and traction made; subsequent examination showed that there were three such fractures.[1]

Luxations of the femur consequent upon obstetric operations, according to Ruge, are exceedingly rare; upon 300 autopsies of newborn infants he did not find a single true dislocation of this bone. Küstner, in referring to luxations of the hip, speaks as follows:

"Göschen relates a case in which Langenbeck reduced such luxation after the subject, a girl, was thirteen years old, and mentions in this connection that Stromeyer had met with twenty cases. The only possible way in which this injury could occur would be by sudden and violent force drawing down the limb, and then dislocation upon the ilium might result. But the force must be great. I have suspended to the leg of a child, from six to ten minutes, a weight of from sixty-six to eighty-eight pounds, without any injury to the joint."

Complete paraplegia in connection with facial paralysis of the right side has been observed following a difficult labor in which the forceps was used. Examples of rupture of the spinal cord, in connection with rupture of a vertebra, have been observed, and, of course, paralysis of the lower limbs. It is remarkable that in two such cases the children lived for some hours. Paraplegia in the newborn is, as Nadaud states, usually an evidence of serious lesion of the cerebro-spinal organs, and the child dies after a short time.

I think the study of these cases of obstetric injuries, which might be greatly extended—for much more remains unsaid than has been said—ought, in the first place, to lead us to a larger charity for fellow practitioners, as many of the most serious injuries in childbirth may occur without the slightest blame necessarily attaching to the accoucheur. Another lesson is that an important distinction should be made, as urged by Ruge, between podalic version and extraction, never resorting to the latter, unless absolutely necessary, after the performance of the former, and thereby many of the obstetric lesions of the fœtus may be avoided. Very wisely, Lamotte says, referring to the injuries that may be done in labor to the child by the accoucheur, "The hand improperly used is more dangerous than any instrument."

Again, the question arises as to the safest manual means for the delivery of the head in head-last labors. In Cieslewicz's collection of cases of injuries of the fœtus in labor, there are several in which very serious consequences resulted from employing the Prague method. One of these, reported by Gusserow, showed, upon post-mortem examination, rupture of the vertebræ and most of the soft parts of the neck so complete that the head was attached to the trunk only by the skin and the vertebral arteries. Ruge, rejecting both the Prague and the Vienna method, prefers elevation of the occiput, bringing the face down, and carefully conducted expression, as least liable to injure the fœtus.

Another question of practical interest is the best method of delivery in pelvic presentations, when interference is necessary. Should we follow that employed by Goodell, in all cases bringing down a foot as soon as possible, and thus be commander of the situation, in case necessity for extraction arises? Must we use the blunt hook? Is the application of the forceps to the breech to be generally advised?

Again, while treatment of fractures of an upper limb, or of the clavicle, is said to present usually no great difficulty, can a similar statement be made as to fracture of the femur? What method of treatment is best? In depressed fractures of the skull, is it not probable that some lives might be saved by the use of the trephine? and in other cases, not followed by death, perfect mental integrity insured?

Finally, many questions as to the diagnosis of obstetric paralyses of the newborn arise, and, also, as to when and what treatment should be employed.

[1] Edinburgh Medical Journal, 1880.

TWO CASES OF ABDOMINAL SECTION FOR TRAUMATISM, AND TWO CASES OF STAB-WOUND OF THE ABDOMEN WITH PROTRUSION OF OMENTUM.

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The following cases came under my care during the past summer and the summer of 1886 while in charge of the wards of Drs. T. G. Morton and William Hunt, at the Pennsylvania Hospital.

Case I. *Stab-wound of liver; abdominal section; death.*—George K., aged thirty-two years, was admitted into the hospital, June 28, 1887, with a stab-wound of the abdomen. He was intemperate in his habits and had been on a spree for the past four days. He was stabbed with a penknife during a fight, a short time before his admission to the hospital.

Upon admission the patient was suffering from shock and was partly intoxicated; his temperature was 98° and his pulse 100 and weak. The wound was an inch and a quarter in length, parallel with and one inch below the border of the ribs, and one to one and a half inches to the right of the median line; he had some fulness and tenderness of the abdomen. No visceral injury could be detected by the finger passed through the wound into the abdominal cavity, but as he had lost such a large quantity of blood, his shirt and pants being saturated with it, and from the position of the wound it was believed that his liver had been injured, I, therefore, thought it best to open his abdomen.

The operation was performed three and a half

hours after the injury. After the patient was etherized the wound was extended to the median line and downward, making an incision five inches in length. A considerable quantity of fluid blood and a few small clots were removed from the abdominal cavity: the right lobe of the liver was found to be wounded, the cut being three-quarters of an inch in length and one-half inch in depth, situated over the gall-bladder about an inch and a half above the lower border of the liver. The wound was touched with the Paquelin cautery to control the hemorrhage and the abdominal cavity was thoroughly washed out with warm water passed through a blunt trocar and tube attached to an irrigating apparatus and the cavity was then sponged dry. The abdominal wound was brought together with silk sutures and an iodoform and bichloride gauze dressing applied. The time occupied by the operation was about one hour and fifteen minutes.

Shortly after the operation his pulse was 120 and his temperature 97°, but the latter rose in a few hours to 100 .

Before the operation was completed his skin became moist, and some hours later he suffered from a profuse cold sweat, his pulse at the same time became weaker and more frequent, he said he was free from pain and it was observed that his abdomen became more relaxed, but he was very thirsty and inclined to be restless.

He was given stimulants by hypodermatics and by the mouth, but he gradually failed and died about twenty hours after the operation.

Autopsy.—The abdominal incision looked well and the abdomen was relaxed; the abdominal cavity contained about a half ounce of blood-stained serum, but no signs of peritonitis were found and there had not been any further hemorrhage; the wound in the liver also looked well.

REMARKS.—I was very much disappointed in the result of this case, as I thought he should have recovered; death was due, I think, to the excessive loss of blood before the operation and to his habits; peritonitis I feel sure would not have developed, as the abdominal cavity was thoroughly washed out and left in a good condition, as the post-mortem examination proved.

Some difficulty was experienced in keeping the intestine in the abdominal cavity during the operation, especially while the incision was being closed; it was also difficult to draw the liver forward sufficiently to touch the wound with the cautery, as the edge of the liver, while the patient was in the recumbent posture, had been drawn up at least two inches above the position it had occupied when he was stabbed.

From the loss of blood and sweating his blood-vessels were almost emptied, and for hours before death his pulse was scarcely perceptible at the wrist.

CASE II. *Pistol shot wound of abdomen; abdominal section; recovery*.—Peter McG., aged eighteen years, blacksmith, was admitted into the hospital July 4, 1887.

He was accidentally shot while struggling with a friend who had a loaded pistol in his hand. Upon admission about a half hour after the injury his general condition was fair, his temperature was 98⅘°, and his pulse 110, there was slight fulness of the abdomen, and he complained of a dull pain in the umbilical region; the bullet-wound was one and a half inches to the left of, and a half inch below, the umbilicus; a probe readily passed along the wound into the abdominal cavity, taking a direction backward and to the right.

The operation was performed at 1 P.M., three and a half hours after the injury, and I was assisted by the resident surgeons. After the patient was etherized, the abdomen was opened by an incision in the median line, extending from two and a half inches above to four inches below the umbilicus, and a considerable quantity of fluid blood was found in the abdominal cavity.

The bullet had passed through the omentum near its attachment to the transverse colon, through the transverse colon, and then through the jejunum near its commencement, and through the mesentery of another coil of jejunum, lodging, it was thought, in the muscles of the back, to the right of the spine, but it was not traced further.

The four intestinal wounds were sewed up with fine silk, about twenty Lembert sutures being used; the wound in the mesentery was also brought together with silk sutures.

No fecal extravasation had taken place, the intestines appearing quite empty; there was considerable discharge of gas and blood from the wound of exit in the jejunum while it was being stitched, but this stopped as soon as the stitches were tied; some extravasated blood and a bleeding vessel were also found at the wound in the omentum, the vessel being ligated; there also seemed to be slight bleeding from some deep point in the back, which it was thought best not to waste time in looking for, but to trust to its being controlled by the pressure of the abdominal walls. In looking over the small intestine, a recent invagination was found in the ileum, of about one inch in extent, which was readily reduced, no adhesions having formed.

The intestines during the operation were kept covered with towels wet with a warm solution of the bichloride. The abdomen was thoroughly washed out with warm water passed through a blunt trocar and tube attached to an irrigating apparatus, so that all parts of the cavity could be reached.

The abdominal incision was brought together with silk sutures, a rubber drainage-tube being first passed about two inches into the abdominal cavity just above the umbilicus, and an iodoform, bichloride gauze, and absorbent cotton dressing applied.

The time required for the operation, including the application of the dressing, was one hour and ten minutes.

During the operation he had been given one or two hypodermatic injections of brandy and tincture of digitalis, as his pulse was weak. Just after the operation his temperature was 101°, and his pulse 120; at 4 P.M. his temperature had risen to 102 , but at 8 P.M. it had fallen to 100°, and his pulse to 104.

In the evening he was somewhat restless, and had a slight tendency to sweating; he was ordered a hypodermatic injection of morphia and atropia,

which had the desired effect; he was also ordered enemata of beef-tea and whiskey every four hours through the night.

July 5. He had passed a comfortable night, and was doing very well; his morning temperature was 100½°, his pulse 94, and his respirations 16. The abdomen was relaxed, but felt somewhat sore, otherwise he said he was free from pain; there had been a free discharge of bloody serum through the drainage tube. He was ordered small quantities of beef-tea and peptonized milk by the mouth, and the enemata were continued. At ten o'clock in the evening the drainage-tube was removed, as all discharge had stopped; after this he continued to do very well, with the exception of two or three slight attacks of vomiting which occurred during the first three days.

7th. The patient had a natural looking passage from the bowels.

9th. His temperature had fallen to 99°, and his pulse was 72; he was allowed fuller diet, and the nutritious enemata were stopped. Part of the stitches were removed to-day on account of suppuration having commenced along their tracks from the stitches cutting; the remaining sutures were removed three days later, and the parts were supported with adhesive plaster.

22d. He was allowed to get up; the wound had healed with the exception of a small superficial ulcer at the upper part.

August 5. Patient passed from under my care; his wound was perfectly healed, and he was apparently in his usual health, but he said that at times in making exertions he would have pains in his abdomen.

Remarks.—The above, I believe, is the first successful case of abdominal section for gunshot wound that has occurred in this city, the few other cases that have been operated on have all died.

A very interesting point in connection with this case, and which was one of the first things to attract my attention after the abdomen was opened was the invagination of the ileum; it was situated somewhere near the middle of the small intestine, and had no doubt followed the injury; the wounding of the intestine most likely causing increased peristaltic action which led to the invagination.

Some difficulty was experienced in returning the intestines into the abdominal cavity, and keeping them in while the abdominal incision was being sutured, as the walls was very tense, and this tension was the cause of the stitches cutting, and the suppuration which followed.

Although no diagnostic symptoms of injury of the viscera were present in this case, abdominal section was decided upon from the fact that the ball was found to have entered the abdominal cavity.

I am very much indebted to the resident surgeon, Dr. Samuel B. Shoemaker, for the interest and care he took in the after-treatment of this case upon which, in a large degree, success in such operations depends.

Case III. *Stab wounds of chest and abdomen, with protrusion of omentum; death on the thirty-fourth day from empyema.*—Alexander H., aged twenty-eight years, was admitted into the hospital August 14, 1886, having been stabbed with a penknife about three-quarters of an hour before admission.

Upon admission the patient, a man of intemperate habits, large and very muscular, was suffering from severe shock and loss of blood. His temperature was 95°, and his pulse frequent and very weak. He had a stab-wound of the abdomen about two inches above, and one inch to the left of the umbilicus, through which the omentum was protruding, and he had also been stabbed in the chest about two inches to the left of the sternum, the knife passing between the second and third ribs, wounding the lung, as his expectoration was bloody, and most likely cutting the intercostal artery, as there was a large quantity of blood in the pleural cavity, and he had bled freely, externally; he also had another wound four inches in length on his left side, in the line of the nipple, exposing the ribs.

The abdominal wound was enlarged to about two inches, but no intestinal injury could be detected with the finger, and no cut could be found in the omentum; two and a half inches of the protruding omentum were removed, its base tied with catgut, and the stump returned into the abdominal cavity; the deep muscles and peritoneum were then brought together with three catgut sutures, and catgut was used for the superficial stitches; the other wounds were also sutured with catgut, and antiseptic dressings were applied.

The next morning the patient had reacted from the shock, but his pulse was still weak, and his respirations were frequent and shallow. Inflammation of the lung afterward set in with fever, delirium, and extreme restlessness. The abdominal wound did well until the fifth day, when the dressing became displaced, and the superficial stitches gave way; it was afterward found impossible to keep any dressing on for more than a few hours at a time, on account of his restlessness. The wound suppurated, but he did not have any peritonitis; the other wounds healed by first intention.

In a few days his lung cleared up, but the blood in the pleural cavity, instead of being absorbed, became purulent.

He passed from under my care on September 1st, at this time the abdominal wound was healing, and the others were healed, his delirium had passed off, but he still had slight fever and there was considerable effusion in the left pleural cavity; the effusion afterward increased, and he died September 17th of empyema.

At the autopsy the abdominal wound was found healed and the abdominal cavity normal, with the exception of the stump of omentum being attached to the seat of the abdominal wound.

Case IV. *Stab-wound of abdomen with protrusion of omentum; recovery.*—John O'M., aged twenty-five years, was admitted into the hospital July 24, 1887, having been stabbed with a knife a few minutes before admission.

Upon admission the patient, a strong, healthy-looking man, was suffering from shock; his temperature was 97°, and his pulse 84; he had lost very little blood. The wound, which was one and

a quarter inches in length, was situated five inches to the left of, and three-quarters of an inch above, the umbilicus. The finger readily passed through the wound into the abdominal cavity, but no visceral injury could be detected, and no wound could be found in the omentum. The base of the protruding omentum was tied with catgut, and about an inch and a half removed, and the stump was returned into the abdominal cavity. The wound was brought together with catgut sutures, and the usual antiseptic dressings applied. The highest temperature reached after the operation was 99½°; the wound healed by first intention, and the patient did not have a bad symptom: he was discharged on the twelfth day after his injury, perfectly well.

REMARKS.—In the last two cases, as no visceral injury could be detected with the finger passed into the abdomen, and as no cut could be found in the omentum, it was believed that no visceral injury was present; and, therefore, it was considered unnecessary to perform abdominal section. In the first case, if silk had been used for the abdominal stitches, as I believe it always should be, if there is likely to be much tension on the stitches, I think the wound would not have been torn open during the delirium of the patient.

The spray was not used, otherwise all the operations were done under strict antiseptic precautions, with the exception of simple warm hydrant water being used for washing out the abdomen in the first and second cases.

SULPHURETTED HYDROGEN VERSUS THE TUBERCLE BACILLUS.

BY E. L. TRUDEAU, M.D.,
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IN an article published in THE MEDICAL NEWS for May, 1887, Dr. Hugenschmidt extols the efficacy of H_2S in rendering innocuous tubercular products, and quotes in support of his views the experiments of Niepce, who claimed that tubercular sputum exposed for ten minutes to an atmosphere containing 3 per cent. of H_2S was thereby rendered entirely innocuous to rabbits. These results have recently been frequently quoted and were so directly opposed to the evidence offered by my own recorded experiments with the gas in the proportions recommended by Bergeon, that I decided again to test the matter in the laboratory, making all the conditions as favorable as possible for the triumph of the sulphuretted vapor over the germs.

On May 10, 1887, a tube containing a pure culture of the tubercle bacillus was subjected for twenty minutes to a stream of pure *undiluted* H_2S, made from sulphide of iron and sulphuric acid. The conducting tube was pushed through the cotton and held within half an inch of the coagulated serum, and the jet of gas allowed to play freely on the bacilli upon its surface. The entire culture soon became so blackened by the action of the sulphur as to resemble dark-gray paint. The microbes thus treated were then mixed with sterilized water and injected into the pleural cavities of two full-grown rabbits. These animals were at once placed in a large box, well fed and kept under a shed in the open air all summer, a favorable environment having been found to postpone materially the fatal issue in inoculated rabbits. On October 19th, or 162 days after the operation, both rabbits died within two hours of each other. The autopsies, which were made by Dr. Richard Hall and myself, showed typical and advanced pulmonary tuberculosis in both rabbits; the right lung was literally riddled with tubercles and large caseous foci, and the left lung was also extensively involved, while the bronchial glands were enlarged and cheesy.

This simple experiment seems worthy of record, inasmuch as the evidence it presents may help to correct any false impression already existing as to the germicidal value of H_2S. It also serves to demonstrate the resisting power of the tubercle bacillus and its spores as well as the difficulties attending any attempt at its destruction in living tissues by chemical agents. If so thorough an exposure to the undiluted gas is incapable of destroying this microbe, or of materially staying its destructive power, how futile must be the attempts made to incommode it by rectal injections, or inhalations containing infinitesimal quantities of this apparently feeble agent.

MEDICAL PROGRESS.

SURGICAL ANTISEPSIS AS PRACTISED BY NUSSBAUM, OF MUNICH.—NUSSBAUM still uses the spray, employing weaker antiseptics for rooms not already infected, and stronger preparations for suspicious rooms. Operator and assistants cleanse their hands for three minutes with soap and water, then with five per cent. carbolic acid, and then with sublimate solution. Sponges are not used. Nussbaum considers the aseptic treatment of wounds to be an ideal, realized with great difficulty; the sterilization of a wound is still more difficult, and a break in the chain of precautions will destroy the whole. Nussbaum lays especial stress on rest to an injured part; if possible, elevation; protection against infection; and thorough drainage. Chromic acid catgut is used as suture material. In lacerating wounds of the parenchyma of organs, or of cavities of the body, a dressing of material saturated with an antiseptic, and still damp, is used; when necrosis and suppuration are not expected dry dressings are used. The wet dressing consists of carbolized gauze wrung out of a two and a half per cent. carbolized solution, or of twenty per cent. iodoform gauze wet in boric acid solution and used in tampons; over these are placed dry gauze and salicylated cotton, among whose folds gutta-percha tissue is placed. Instruments and utensils are cleansed with five per cent. solution of carbolic acid. Nussbaum thinks very highly of salicylic acid in powder as a local application to fresh wounds. It is antiseptic and insoluble. Iodoform he also uses to promote granulation. For dry dressings peat cushions and wood wool are used, in addition to antiseptics.

Nussbaum mentions eighty different substances which have been investigated as antiseptics in surgery.—*Centralblatt für Chirurgie*, October 22, 1887.

A Spray for the Treatment of Whooping-cough.—Kolover sprays the fauces with the following solution in treating whooping-cough:

R.—Quiniæ sulph.	gr. 50.
Acid. sulphur.	gtt. 30.
Aquæ destill.	℥ 5½.

This may be used every two hours for the first three days, and every three hours for the remainder of the first week, after which it will be unnecessary.—*L'Union Médicale*, October 18, 1887.

Morphine Phthalate.—Bombelon writes enthusiastically about this new salt of morphine, which he thinks has important advantages over all other morphine salts. It is uncrystallizable, but can be procured in shining transparent scales, which dissolve easily in five times their weight of cold water. The advantages he points out are briefly: 1. A form strikingly distinct from that of any other alkaloidal salt, rendering mistakes of identity almost impossible. 2. Extreme solubility in cold water. 3. Freedom from any irritating property, when used hypodermatically. 4. Permanence of its aqueous solutions, in contrast with those of other morphine salts.

It is prepared by dissolving pure morphine to saturation in a hot aqueous solution of phthalic acid, filtering the solution, concentrating by evaporation, and "scaling" on plates of glass.—*Pharmaceutical Era*, October, 1887.

Ocular Asepsis.—Gayet, of Lyons, has investigated the presence of bacteria in and about the eyes, and found that in 178 cases, specimens of secretions taken from the conjunctivæ produced bacterial growths in 139, while 39 of the inoculated tubes remained sterile. In 100 eyes only 28 were free from germs. Age had no influence, but statistics showed that only 10 per cent. of men were free from germs, while 38 per cent. of women were exempt. Most of the tubes gave positive results in from twenty-four to forty-eight hours. Gayet employed careful antisepsis in his operations upon the eyes, using sublimate, and boric acid 1 to 600. In his first series of 157 cases, 107 were completely successful, 39 were complicated by minor accidents, and 11 had phlegmonous inflammations. In a second series, in which boric acid was employed, secretions were tested from 35 cases, 32 of which contained germs and 3 were sterile. Of the 32 cases in which the boric acid treatment was used, 27 were entirely successful, 3 gave good results, and 2 had phlegmonous inflammation. Gayet concludes that the majority of cases conceal bacteria under their eyelids. The use of antiseptic or aseptic means appears to have very little influence on the presence of germs in the conjunctival sacs; one can never be certain of disinfecting the field of operation. The germs which are found are not all pathogenic, but suppuration occurs in 6½ per cent. of cases, while it is estimated that 75 per cent. of tissues are fertile soil for bacterial growth. The spores seem to comprise the dangerous species, for they are found in eyes destroyed by accident, in which suppuration is inevitable. These spores are not always dangerous, for we can isolate those which will not produce suppuration.—*Revue de Thérapeutique*, October 15, 1887.

The Clinical Diagnosis of Chlorosis.—Graber, of Munich, concludes from his clinical observations of chlorosis that it is purely a blood disease, which is characterized by an excessive alkalinity of the blood plasma, with alterations in the form, size, and color of the red blood-cells. The diagnosis is made by establishing the following points:

1. Increased alkalescence of the blood.

2. Normal number of corpuscles, with lessened quantity of contained hæmoglobin.

3. Normal proportion and condition of leucocytes present.—*Therapeutische Monatshefte*, October, 1887.

Typhoid Fever in the Tropics.—The peculiarities of typhoid fever in India are thus described by Surgeon Bigg, in the *British Medical Journal* of October 22, 1887:

1. The disease is sporadic.

2. It has originated when the drinking water was analytically pure, the drainage engineering perfect, and the surrounding sanitation vouched for by the sanitary and medical authorities as being good.

3. The absence of lenticular spots.

4. The existence of constipation throughout the disease. When looseness of the bowels is present, it is caused by the irritation set up by the presence of the accumulation.

5. The absence of enlargement of the spleen, unless that organ is specially affected.

6. The abdominal lesions are more diffused and scattered, involving ileum, jejunum, duodenum, and stomach. Ulceration is also sometimes found in the colon.

7. The abdominal organs may be quite free from disease.

Ephedrin, a New Mydriatic.—Nagai, of Tokio, has obtained an alkaloid from a plant bearing the name of *Ephedra-vulgaris helvetica*, which has been used by Miura, and has shown interesting mydriatic properties. The muriate is an easily soluble, white, crystalline substance, whose solution readily decomposes under the influence of light. The hydrochlorate, when given in doses of one-eighth or one-sixteenth of a grain, produced death in frogs, with progressive paralysis of respiration and cardiac action, no stage of acceleration having been observed. The heart ceased to beat in diastole. The pupils were greatly dilated. In mammals respiration and heart-beat were greatly accelerated, and both ceased suddenly, with choreic spasms and rise of temperature. Arterial tension was diminished. The pupil dilated when the drug was given subcutaneously, and when its solution was dropped into the conjunctival sac. Death occurred from respiratory and cardiac paralysis.

Fatal doses were in the proportion of five grains to every thirty-five and one-fifth ounces avoirdupois of the body weight of the animal experimented on. Experiments with six and seven per cent. solutions in men gave varying mydriatic effects. When one or two drops of a ten per cent. solution were dropped into an eye, dilatation of both pupils followed after from forty to sixty minutes. When the refraction of both eyes was the same, and no inflammation was present, the dilatation was equal. The pupil was not entirely dilated, but suffi-

ciently so as to permit an examination of the whole retina.

When a strong light was turned upon such an eye a feeble reaction of the pupil was observed. Accommodation was very little or not at all affected.

Children and old persons were more susceptible than the young and strong. In cases of irritation or inflammation of the iris dilatation of the pupil did not occur. The duration of the mydriatic effect was from five to twenty hours.

No ill effects were observed after using the drug for fourteen days. Alteration in intraocular tension were not observed. Comparison with one per cent. solution of homatropine showed that the effect of atropine solution persisted sixty-nine hours. — *Wiener medicinische Presse*, October 16, 1887.

THE DIAPHOTOSCOPE.—SCHÜTZ, of Frankfort-on-the-Main, presented to the Dermatological Section of the recent Congress of Naturalists and Physicians, at Wiesbaden, an apparatus for endoscopy which resembles the ordinary ophthalmoscope in size and form, and mode of use. It includes, however, an electric source of light, with the proper mechanism for avoiding the transmission of heat, by means of which a thorough illumination of cavities to be explored may be obtained. The battery required to equip the apparatus is compact and convenient in size, and the inventor presents the whole for the investigation of the profession as an addition to the resources of those who practise endoscopy.— *Monatshefte für Praktische Dermatologie*, No. 20, 1887.

THE TREATMENT OF WHOOPING-COUGH.—MOIZARD has used the following powder by insufflation:

Benzoin. pulv.,	
Bismuth. salicylat. . . .	āā 5 parts.
Quiniæ sulphat.	1 part.

The only apparatus needed is a simple rubber tube, and a source of air blast. The powder may be inserted in the end of the tube, and the tube placed in the nostril; air is then forced in, and the powder carried within the nares.

CARTAZ has used

Bismuth. subnit.	2 parts.
Benzoin.	4 parts.

GUERDER has used an impalpable powder of equal parts of boric acid and roasted coffee, by insufflation.

GRAFFNER has employed the following solution in spray, with excellent results:

Cocain. hydrochlor. . . .	gr. $\frac{1}{10}$ to $1\frac{1}{2}$.
Aquæ destill.	ʒ $1\frac{1}{4}$.
Potass. chlorat. . . .	gr. 8.
Aquæ amygdal. . . .	♏ 8.

Cocaine may be also mixed with chloroform, in proportion of 6 to 100. Of this 10 drops should be placed in a glass of warm water, and the vapor inhaled.— *London Medical*, October 20, 1887.

THE INFLUENCE OF THE MICROÖRGANISMS OF THE MOUTH AND INTESTINES UPON DIGESTION.—VIGNAL has studied the action of seventeen species of microörganisms found in the mouth and intestines upon digestion; and his results are summarized as follows by the *London Medical Record* of October 15, 1887.

Of these organisms, 8 dissolve cooked albumen, 5 swell it or render it transparent; 10 dissolve fibrine, 4 render it transparent or swell it; 9 dissolve gluten; 3 transform starch, but only 1 acts with some energy, another seems to live upon it, but without transforming it; 7 coagulate milk; 6 dissolve casein; 9 transform lactose into lactic acid; 7 intervert cane-sugar; 7 cause glucose to ferment and transform it partially into alcohol; all these actions are more or less energetic.

Among these microörganisms, 6 resist more than twenty-four hours the action of the gastric juice at 36° to 37° C. (98.8° to 98.6° F.), whether the culture is recent or old with spores; 5 resist its action more than two hours, when the culture is recent, and more than twenty-four hours when it contains spores; 2 others resisted one hour only, when the culture was recent, and the spores of 1 of these resisted twenty-four hours, those of the other six hours only; the last 5 do not resist its action even for half an hour, whether the culture be recent or old.

Bile and the pancreatic juice, prepared artificially and possessed of very powerful action, have no destructive action on these microörganisms.

In fecal matter M. Vignal found again 6 of the buccal microörganisms (the bacillus mesentericus fuscus; the bacillus *d*, common in the colon; the bacilli *b*, *c*, and *e*; and the coccus *k*) and 4 other microörganisms, 7 streptococci, 1 coccus, and 2 bacilli. 1 of these latter dissolves albumen, 2 render fibrine transparent, 3 dissolve gluten, 1 transforms potato starch but not common wheat starch, although in order to furnish it with nitrogenous matter veal extract was employed in place of water; 2 coagulate milk; 1 partly dissolves casein, and coagulates what it does not dissolve; 3 transform lactose into lactic acid, 3 intervert cane-sugar, and 2 partly transform glucose into alcohol. The action of these microörganisms must be considerable on aliments, for a series of numerations showed that there were more than 20,000,000 of them in a decigramme of fecal matter, and these were not all developed in the mediums employed.

In order to attempt to realize what takes place in the digestive tube where the microörganisms are not isolated, M. Vignal cultivated several series of phials, on the one hand, with dental tartar and coatings from the tongue, and, on the other hand, with a little water in which fecal matter had been dissolved.

The attack of the substances contained in the phials was at first very energetic; but from the third day, sometimes from the second, the action was permanently arrested. Is it to be concluded that the microörganisms of the mouth and of the fecal matter, when mixed together, have no action on alimentary substances? Evidently not. The transformations they undergo under the influence of these microörganisms have come to a stop in the phials, because the glass sides of these could not, like the intestine, absorb the products they give birth to as fast as they were produced.

To sum up, the result of these researches is to justify M. Pasteur's opinion that these microörganisms play a very important part in digestion, and also that the phenomena of digestion in general, and particularly the part played by microorganisms, are more complex than was at first supposed.

Local Refrigeration.—Bailly has used chloride of methyl by an apparatus, which he terms a stypophore. By this means he carries the degree of effect produced to the grade of vesication, if needed. He applies this treatment in neuroses of various kinds, and styles it stypotherapy.—*L'Union Médicale*, October 20, 1887.

Poisoning by Antifebrin.—Doll reports the case of a woman suffering from migraine, who purchased sixty grains (according to the apothecary's statement) of antifebrin, and took it in two doses at short intervals, at about 11 A.M. In three hours emesis, cold perspiration, and coma developed. At 9 P.M, Doll was summoned. He found the forehead, face, nose, ears, upper thorax, hands, and feet icy cold, and covered with cold perspiration; the other portions of the body were warm and moist: the color of the face was cadaveric; the eyes were closed, but opened when roused; pupils moderately dilated, and reacting feebly. The heart beat tumultuously, pulse 120, arterial tension varying greatly; respiration accelerated; abdominal pain and nausea present, attempts at emesis made, but unsuccessfully. The patient answered questions, stating that she had become unconscious after taking the drug. Free stimulation was given during the night, but alcoholics were avoided, as antifebrin is soluble in alcohol. The intoxication terminated with profuse perspiration and free defecation. The patient did not remember that she had talked with the physician. The effect of the drug resembled the condition of hypnotism more than anything else.

Two days afterward anorexia and headache persisted. The sensorium was free, and no other abnormal symptoms were present.—*Deutsche medicinische Zeitung*, No. 72, 1887.

A Nutrient and Sedative Enema may be prepared after the following formula:

Beef bouillon	℥ 3⅛.
Eggs	1.
Bordeaux wine	℥ 6¼.
Bicarbonate of soda	gr. 8.
Tinct. opium	gtt. 4.
Chloride of sodium	gr. 3.
Peptone	℥ 4.

—*Révue de Thèrapeutique*, Oct. 15, 1888.

Death by Heart Failure from Gastric Irritation.—If the means of masticating food be wanting, the first stage of the process of digestion cannot, of course, be performed, and this is in itself a great evil; but as a recent fatal case has shown, actual perils to life from physical causes may arise, and perhaps become disastrously effective. By post-mortem demonstration, it has been proved that an accumulation of unmasticated food taking place in the stomach may so distend the stomach as to press upon and irritate the heart in such manner that, being in a morbidly weak or exhausted condition, its natural function may be arrested and death take place by syncope. It is a familiar fact that a greatly distended stomach may cause "palpitation" and other distressful experiences, and it is not in the least degree surprising to find that the excitation set up may be so aggravated as to produce fatal effects in a special state of the organism. But it is important to notice how this untoward ending is reached, because the attainment of this issue is only a question of degree in the disturbance. The operation from cause to effect is purely one of nerve action, and the *modus operandi* is either completely reflex, in which case the process is exhaustive as regards the particular centre affected, or partially reflex, the circuit, so to say, being broken at the centre, and the force of the peripheral excitation exerting an inhibitory influence on the cardiac or occasionally on the respiratory centre. It seems probable that in certain cases there may be spasm of the muscular coat of the vessels of the heart (perhaps the coronary), or of the heart itself, producing either a condition resembling that which is supposed to obtain in some forms of "angina," or arresting the ventricular contraction in systole, or, it may be, by asystole, though this last-mentioned ending is perhaps more commonly reached by inhibition, as in another class of cases. When the excitation caused at the periphery is of a nature corresponding with, and in some respects resembling, high tension of an electric current, the stimulus propagated along the afferent nerve trunk may so act on the centre, indirectly, perhaps, as to interrupt its action. In this last event death will occur by arrest of the ventricular movement in diastole or arrest of the systole. Or the obstructive or exhaustive action may be upon the respiratory centre with seemingly "asthmatic" symptoms at the opening of the attack, in the course of which death occurs. Happily, cases of a fatal issue from peripheral irritation of the nerves are not of very common occurrence; but this renders it the more desirable that those which do occur should be very carefully investigated. The subject of death from "heart-disease" is one that greatly needs to be studied in the light of precise pathology.—*Lancet*, October 22, 1887.

Minor Points in Surgery from Nussbaum.—Nussbaum, of Munich, in using the thermo-cautery, employs a strip of wood, like a ruler, pierced by one or more holes as desired. This is dipped in ice-water and pressed firmly against the part; the cautery is then applied through the apertures. By this means bleeding and too extensive burning are prevented. Nussbaum frequently burns deeply into tumors which cannot be removed, causing a contraction and cicatrization of the growth, checking its progress.

In wounds of the cardiac ventricles Nussbaum advises the alternate opening and closing of the external wound four or five times in twenty-four hours. Coagula are thus removed, and fatal decomposition of the blood is prevented.

In parenchymatous bleeding tampons of cotton soaked in peroxide of hydrogen have given excellent results in checking hemorrhage.—*Centralblatt für Chirurgie*, October 22, 1887.

The Spread of Diphtheria.—At the late International Congress of Hygiene, at Vienna, Professor Teissier, of Lyons, gave the result of his experience as to the spread of diphtheria. In his opinion the infective agent of the disease could not be propagated either by water or by food, and only in very rare cases by direct contagion from person to person. He believed that the virus was present in the earth, and was conveyed into

the human organism by means of the dust which penetrated into the air-passages. He attributed great importance to the diphtheria of fowls as the means of communicating the disease to man, and affirmed that he could prove that the disease had actually been communicated in this way.—*British Medical Journal*, Oct. 22, 1887.

Iodol in the Treatment of Blennorrhagia.—A simple but efficient mode of using this drug in blennorrhagia is by combining it after the following formula:

Sodii	10 parts.
Gummi arab.	5 "
Aquæ destill.	200 "

An emulsion may be made.—*Revue de Thérapeutique*, October 15, 1887.

A New Ophthalmometer.—At the recent meeting of the German Ophthalmological Society, at Heidelberg, Dr. C. S. Bull, of New York, exhibited an instrument which he had devised, which is described as follows by a correspondent of the *Cincinnati Lancet* of October 29, 1887:

Consisting of a brass strip like a ruler about two feet long, with a handle beneath by which to hold it; at one end a disk-screen with a sight-hole, behind which a series of lenses is adjusted and readily changed; on the surface of the ruler (as I will call it for convenience) is engraved a series of *dominos* drawn in exaggerated perspective; on looking through the lens some one or another of these dominos is seen in perfect shape—for instance, an eye looking through a — 5 dioptric lens and seeing the domino with points sharply and perfectly defined is emmetrope—the domino lies at just the focal distance of the — 5 lens (about 8 inches); if the eye sees any domino beyond the five point, hypermetropia is shown, and its degree to within a fraction of one dioptric; myopia is proven when a nearer domino is defined. An attachment for estimating astigmatism is equally rapid and simple.

Precautions to be Enjoined upon a Patient Suffering from Chancroid.—Besnier advises the following cautions in the *Revue de Thérapeutique* of October 15, 1887:

The contact of urine with the chancroid should be avoided, as suppuration is then favored.

After micturition the chancroid should be washed with a solution of boric acid and covered with a protective ointment.

The pubes should be frequently bathed with soap and water, and a pomade of boric acid, one-tenth per cent., thoroughly applied. If a bubo occurs, the parts should be shaved, and collodion applied.

Tarnier's Basiotribe.—Tarnier's basiotribe, a somewhat complicated instrument which was described before the Paris Academy of Medicine in December, 1883, has recently been used in three cases in Professor Kovacks's clinic in Budapest, with, it is stated, very satisfactory results, the application being made with great facility, no splinters penetrating the scalp, and the mothers being all able to leave the hospital on the tenth day.—*Lancet*, October 22, 1887.

Ninety Intestinal Parasites in One Individual Case.—Dr. Roux, Surgeon of the Cantonal Hospital at Lausanne, describes in the *Correspondenzblatt für Schweizer Aerzte* of August 15, 1887, a singular case in which the patient, a girl, aged 21½ years, discharged after two 90 minim doses of extract of male fern) at least ninety bothriocephali lati. The worms passed out in a bundle, the patient assisting the delivery by tearing the package with both her hands, and at the same time uttering shrieks like a woman in labor. The agonizing delivery lasted ten minutes. The mass of parasites filled up a half of a chamber utensil. The disentangling and counting took exactly four hours and a half of the author's time. As an individual only such a worm was considered which had a head, and at its other end measured not less than 3 or 4 millimetres in breadth, or which had an absolutely thread-like (though headless) anterior end, and measured not less than 1 metre in length. Numerous very long ribbons, which did not answer those conditions, were left out of the reckoning; neither were any of the ribbons which had been discharged several times by the girl for a couple of weeks previously taken into account. There could be no doubt, therefore, that the number of worms, given as 90, in reality far surpassed that figure. The length of individual bothriocephali varied between 250 and 60 centimetres, a large number measuring only between 100 and 60. Except some slight nervous phenomena (such as occasional headaches, vivid dreams, *semi-somnambulisme*), the patient did not present any morbid symptoms. She was a robust and ruddy, and even cheerful and active, country girl, with excellent appetite and digestion, and with 95 or 97 per cent. of hæmoglobin in her blood (as Gowers-Sahli's hæmoglobinometer showed). The case seems to give a support to Dr. Zschokke's theory, according to which the prevalence of bothriocephalus latus amongst the population residing around Lake Leman should be attributed to the eating of infected fish, mainly that of perch (*perchette*). At least, the girl, who had come to the locality from Argovia about the Easter of 1884, during a period of several months' duration, in 1886, was dining on perch (and bothriocephali) once a week, or even still more often, the patient residing at the time at Bonvard, near the lake mentioned.

Indications for Intrauterine Medication for Puerperal Sepsis.—Bokelmann considers intrauterine douches indicated:

1. When, forty-eight hours after birth, the temperature rises to 101.3 F. or 102.2 F., with frequent pulse, without a recognizable cause for it.

2. When fragments of placenta or membranes remain in the uterus as a cause for disturbance.

3. When symptoms of infection of the endometrium are pre ent.—*Berliner klinische Wochenschrift*, No. 37, 1887.

Iodol in Otitis Media Purulenta.—Purjesz, of Budapest, has treated eighteen cases of suppuration in the middle ear with iodol. The remedy was applied by insufflation once daily. Lessened secretion and painless improvement followed. Two cases only resisted treatment. No unpleasant effects referable to iodol were observed.—*Therapeutische Monatshefte*, October, 1887.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 12, 1887.

OUR QUARANTINE DEFENCES.

ANOTHER Mediterranean steamer has arrived at the New York Quarantine, bringing another batch of immigrants from the cholera-infected localities of Italy. Notwithstanding the assurance of the Health Officer who performed the official inspection, that the ship, crew, and passengers are in an excellent sanitary condition, and that the ship's log shows no evidence of disease during the passage, this new arrival occasions renewed anxiety that, in the absence of a thoroughly equipped and efficient quarantine, the continual influx of people and baggage from cholera-infected districts, sooner or later, will plant this terrible scourge somewhere in our midst. If the utmost care and vigilance be not constantly exercised by the quarantine officers at the port of arrival, especially with regard to baggage and concealed cases of cholera which find no mention in the sanitary record of the voyage, the experience of the last epidemic of 1873, no less than our present knowledge of the means by which this disease spreads, points to what may ultimately occur this year or the next. It is now known that outbreaks of cholera at Carthage, Ohio; Crow River, Minnesota; and Yankton, Dakota, in 1873, were caused by infected household goods of emigrants from Holland, Sweden, and Russia. "These immigrants *sailed from healthy ports, in healthy vessels,* and were subjected to the usual sanitary requirements of the period. They passed through New York and all the intermediate territory without injury to the public health. But when their infected goods were unpacked in the interior of the continent, they liberated the poison which gave rise to the local outbreaks."

As bearing upon the frequent perfunctory manner of disinfection practised at the "model quarantine stations" in this country, and as supplementary of the criticisms which have previously been made in THE MEDICAL NEWS, concerning the inefficiency of our quarantine safeguards, it may not be inappropriate to refer, at this point, to the remarks of the President of the American Public Health Association in his Annual Address, (see page 561), in which he describes the method of so-called disinfection which he actually witnessed at the port of New York, in the month of September last, on his arrival from Brazil.

It is to be hoped that the authorities at New York begin to understand that whatever alarm has been excited by the presence at that port of two cholera ships and the frequent arrival of immigrants with personal effects from districts where cholera has been recently raging, has been caused rather by the knowledge of the deplorable state of the defences exposed by the report to the College of Physicians of Philadelphia, than by a blind, unreasoning fear of a dread disease. And it may be remarked, just here, that it is neither through the inconsiderate passage of resolutions by quarantine commissioners hindering in the future any access to quarantine stations for the purpose of investigations in the interests of science and the public health, nor through the vituperation, by presidents of quarantine commissions, of the motives, or the acts, or the statements of scientific men who fearlessly make a plain, disinterested, and temperate report to a scientific body of personal observations respecting matters which affect the welfare of sixty millions of people, nor through unscrupulous attempts to prevent prompt and searching reforms by invoking against them the bitterness and prejudice of partisan politics, that this reasonable alarm is to be allayed. The New York quarantine establishment should be at once so thoroughly improved, both in plant and administration, that the country may not only feel secure, but really be safe from the introduction of cholera through that port, and it should be at all times open to the inspection of properly accredited examiners.

We learn with satisfaction that the Mayor of the city of New York has recently not only addressed the President of the United States with regard to the temporary prohibition of immigration from the cholera-infected districts as a measure of public health, but has also sent an official communication to the Health Officer of the Port of New York, calling his attention to the faults pointed out in the Philadelphia report, and offering to raise by voluntary subscription any reasonable sum necessary to make the quarantine at that port what it should be.

Through the evils of our present quarantine system the greatest city in our country, and with it the whole country itself, must rely for protection against

epidemic disease upon voluntary subscriptions from private citizens, alarmed by their recent knowledge of dangers which have threatened them for years. But the report of Drs. Wilson, Shakespeare, and Cleemann, pointed out the fact that the ports of Philadelphia and Baltimore are even much more defenceless against a foreign invasion of cholera than is that of New York, and we should be glad to learn that active measures are being taken to remedy the condition of affairs at these points.

Too implicit trust in the approach of winter, a season in which cholera epidemics do not usually prevail in cold latitudes, as a safe guarantee against the introduction and ultimate spread of this disease, is dangerous, for it should be remembered that Moscow has witnessed a severe winter epidemic, and it should not be forgotten that a late visitation of cholera in the United States came in the dead of winter, and through the port of New Orleans.

It is to be hoped, then, that our present and future danger from cholera, and the justly disquieting facts revealed by the above mentioned report concerning the intrinsic weakness of our maritime defences, together with the public anxiety at present existing, will forcibly aid the efforts of the conservators of the public health in their endeavor to procure national legislation this winter which will provide efficient ways and means for the constant defence of the general public from epidemic diseases brought into our ports from foreign shores.

MERCURIAL HYSTERIA.

The various effects produced by different metallic substances finding a constant but slow entrance into the body are so constantly mistaken by the practitioner for symptoms of some organic disease of idiopathic origin that the paper of Letulle in the *Gazette Hebdomadaire* of Sept. 23 and 30, 1887, is of interest, in that it calls attention once more to the possibility of the production of markedly aberrant symptoms by a metallic poison other than lead.

Hysterical hemianæsthesia or monoplegia due to the presence of lead or arsenic in the system has been recognized for years, and carefully studied by Vulpian, Charcot, and others, notably Debove, who applied the term *hystéries toxiques* to all conditions of this character. In 1877, Dr. Jean published the records of two remarkable cases of hemianæsthesia due to the chronic absorption of mercury, and his report has been followed in France, by Hallopeau, Aigre, and several others.

Subject to these attacks are artisans engaged in the manufacture of barometers, thermometers, mirrors, and all the handicrafts in which mercury is employed. Abnormal conditions arising from this cause are, therefore, even more frequent in men than in women, and the diagnosis of a case of hysteria occurring in an otherwise healthy male should lead the clinician on the path toward questions calculated to discover any mode of contamination by this metal. The mere fact that the hysterical condition, or other nervous disturbance, has lasted for months, or even years, seems to be no ground on which to base an opinion against the presence of some toxic material, for Letulle reports a case of this character who had passed through the hands of no less than six physicians during six and one-half years. It should be remembered, also, that mercury is as capable of producing strange and varying symptoms as is any other poison of like nature, and all the writers on the subject have met with cases in which limited or general choreas, hemiplegia or monoplegias have existed along with marked sensorial disturbances. Aphasia is by no means a rare occurrence, and tremulousness, closely resembling that of Parkinson's disease, often tends to make a correct diagnosis the more difficult.

The methods of treatment are naturally much the same as those applied in chronic poisoning by lead, and consist in the elimination of the cause, both primary and secondary. The patient should be removed from the mercurial exposure, and those drugs should be administered which we know tend to aid in the elimination of such poisons and the building up of the system.

COLD WATER INJECTIONS IN CATARRHAL JAUNDICE.

Recommended several years ago by Krull, lavage of the intestine in jaundice has already gained in favor, and the reports by Lowenthal, Eichorst, and Krauss show that in many cases a more rapid recovery follows than when alkalies and diluents are administered by the mouth. In the *Revue de Médecine* for September, Chauffard reports seven cases, in six of which the obstruction to the bile flow was overcome in from four to six days; in one case on the eighth day. From one to two quarts of cold water are injected. The temperature of the water may be a little raised on succeeding days. The injection usually induces a lively peristaltic action, which may be irregular and cause painful colic. To the extension of the movements to the duodenum Krull attributes the beneficial effects of the treatment, as the active contraction of this part of the bowel is likely to cause expulsion of the obstructing mucus. Chauffard regards the action as entirely reflex, the cold water inducing a strong contraction of the gall-bladder and larger bile-ducts. Normally it is in this reflex manner that the chyme in the duodenum induces expulsion of the contents of the gall-bladder, and it seems probable that the sudden shock of a large injection of cold water would induce active contraction of the walls of the ducts.

In this country the method has been used with

success by Musser and others at the Philadelphia Hospital, and it is worthy of a more extended trial than it has yet received.

QUARANTINE DOES NOT DEAL WITH THE MOST DANGEROUS DISEASES.

In relation to the importation of scarlet fever to Sutton's Bay, Mich., by emigrants on the steamship "Ohio," reaching New York September 30, 1887, noticed in our issue of October 29th, Dr. William M. Smith, Health Officer of the Port of New York, says: "Developed cases of diphtheria and scarlatina arriving on vessels at this port are removed to Ward's Island. It is impossible, under the law for the Health Officer or the authorities at Castle Garden, to quarantine persons who have been exposed to the contagion of these diseases; consequently, the sick on board vessels during the voyage, doubtless, often infect the relatives, or those with whom they come in contact . . . and who carry the latent contagion to interior communities. I would be glad if the law allowed those exposed to the contagion of these diseases to be held for observation, as is the case when persons are exposed to the contagion of smallpox."

The instance mentioned above is an illustration of what Dr. Smith says, the child having been exposed during the voyage, was taken sick with scarlet fever the day after arrival at New York; so the infected child went on its way, to spread scarlet fever. In Michigan at least, ten times as many deaths occur from either scarlet fever or diphtheria as from smallpox, and the question may be well asked, Is it not time that the whole subject of quarantine was investigated by the States, and by the United States Government, with a view to protecting the people of this country from the introduction of the really dangerous diseases?

DEATH OF MOSES GUNN, M.D., LL.D.

This well-known surgeon and teacher ended a long and active professional life at Chicago, on November 4, 1887, aged sixty-five years. Of Scotch descent, he was born in the State of New York, where his youth was spent, and where he received his medical education at the Geneva Medical College, graduating in 1846. He settled at Ann Arbor, Michigan, where he commenced at once to teach anatomy. On the organization of the University, he was appointed to the Chair of Anatomy and Surgery, and the latter branch he taught for fifteen years. In 1853 he removed to Detroit, where he practised, contributing frequently to the current periodical literature. In 1861 he accompanied McClellan's army, seeing much active and arduous service. In 1867 he succeeded Daniel Brainard in the Chair of Surgery in Rush Medical College, where his business energy, skill, and popularity as an operator and teacher contributed largely to the prosperity of the college.

In 1851–52 he made a series of dissections and experiments to determine the pathology of dislocations of the hip and shoulder, and he was one of the first to formulate clearly and demonstrate the method of treatment by manipulation. As an operator in plastic surgery, he was especially expert; and as a teacher of surgery he was unsurpassed. He was a member of numerous societies, among them the American Surgical Association, and presided over its annual meeting in April, 1886, on which occasion he contributed a paper on "The Union of Nerves of Different Functions," which was published in The Medical News of May 8, 1886.

Mayor Hewitt, of New York, has written to Dr. W. M. Smith, Health Officer of that port, calling his attention to the criticisms made by the Committee of the College of Physicians of Philadelphia on the management and arrangements of the Quarantine Station there, and suggesting that the defects be remedied. The Mayor says that if a lack of money stands in the way of making needed changes, he will undertake, by an appeal to his fellow-citizens, to raise any reasonable sum. The Mayor has also written to President Cleveland, suggesting that a friendly representation made to the Italian Government might secure greater precautions in the clearance of vessels from the cholera regions, until the disease has disappeared therefrom.

The first award under the William F. Jenks Prize Fund, of the College of Physicians of Philadelphia, will be made by the Committee, for the best essay upon "The Diagnosis and Treatment of Extra-uterine Pregnancy," as soon after January 1, 1889, as may be practicable. Papers for competition must be written in English, and be presented by the said date. The prize essay is to become the property of the College. The prize amounts to $250, and is open to all the world.

We understand that Dr. J. Solis Cohen has resigned his professorship in diseases of the throat and chest at the Philadelphia Polyclinic, and that he contemplates withdrawing from the attending staff of the German Hospital, at the close of his present term of service, the main object in these withdrawals being to gain time for literary work.

REVIEWS.

Anæmia. By Frederick P. Henry, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Pp. 136. Philadelphia: P. Blakiston, Son & Co., 1887.

Our knowledge of the various forms of anæmia has been so greatly extended within the past few years that

a special monograph will be heartily welcomed. Among American writers no one is better qualified than Dr. Henry to write on this subject, to which for a long time he has devoted earnest study. In the first part of the work the methods of examination are described and the symptoms, diagnosis, and treatment of anæmia fully discussed. Dr. Henry offers an excellent classification of the varieties of anæmia. Under the first division, primary anæmias, are included affections of the cytogenic organs, chlorosis, Hodgkin's disease, leukæmia, and pernicious anæmia. The secondary anæmias are those of fever, hemorrhage, cancer, etc. The toxæmia resulting from the poisons of lead, arsenic, etc., form a third group; and a fourth, the parasitic anæmias, caused by the anchylostomum, the filaria, the organisms of malaria, and the Bilharzia hæmatobia.

We take special pleasure in calling the attention of practitioners to this work as one from the study of which they will rise with clearer ideas on the diagnosis and treatment of forms of disease met with every day in practice, and the true nature of which is too often overlooked or misunderstood.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 26, 1887.

THE PRESIDENT, J. SOLIS COHEN, M.D., IN THE CHAIR.

DR. THEOPHILUS PARVIN read a paper on

INJURIES OF THE FŒTUS DURING LABOR.

(See page 561.)

DR. W. T. LUSK, of New York, said: Dr. Parvin, in his exhaustive *résumé* of the subject, has said that we should exercise charity toward those under whose care these accidents may happen. At the same time I think we should, as scientific men, look upon this record as most humiliating, and should ask ourselves if we should exercise this charity toward ourselves as individuals, should these accidents fall to our lot.

In going over the subject there may, however, be found one or two matters which have been overlooked, or which it might be well to make more emphatic. In speaking of fractures of the skull occurring in spontaneous deliveries, cases which occurred many years ago have been given. In modern times reports of fractures in head-presentations terminating without the intervention of art are very rare. My attention has been called to one such case reported by Veit. The patient had received large doses of ergot. When the child was expelled it was found that the right parietal bone was separated from its fellow, from the occipital, and, to a great extent, from the frontal bone, and two fractures were found in the bone itself. It is a question, whether the cases of spontaneous fracture reported many years ago were due to the abuse of this certainly most unreliable drug.

I saw last summer a very interesting case of depression of the skull following a rather easy forceps delivery. I was sent for because the question had arisen between two practitioners as to the advisability of trephining the skull—introducing an instrument and elevating the depressed bone. I am not sure that this might not be good practice in some instances, but so far we have had no experience as regards results. We know that if the child shows no immediate symptoms from the depression, it is likely to thrive, and that in time the depression nearly or entirely disappears. In the case above referred to we decided to wait, the child has been thriving since, there is still a quadrilateral depression in the frontal region which has not entirely disappeared. I was quite certain that the mother of this child had a contracted pelvis with projection of the promontory; but, in making an examination some three or four weeks after the birth of the child, to my surprise, found that the woman had a fairly roomy pelvis. The anteroposterior diameter measured at least three and three-fourths inches. The only conceivable cause of the depression was the blade of the forceps. This was to me certainly a novelty.

With reference to the amount of force which may be exerted on the neck of the child, I think that if we rely upon the experiments to which reference has been made, we are likely to be led into error. There is no doubt that the resistance of the neck under pressure varies greatly in different subjects. While the neck of one child will bear a weight of 160 pounds, the vertebræ of another will separate under a much less amount of tension. I do not believe that there are even circumstances in which such an enormous pressure as 160 pounds should be exerted. If the after-coming head is retained by tonic retraction of the womb, such traction force must tear through the cervical tissues. If the head is retained by the brim of the pelvis, it is nearly certain that the child will be stillborn when the necessity for such an amount of force exists. It is a question whether we ever should use much force in pulling on the child; whether, indeed, the head cannot better be shoved through the pelvis by suprapubic pressure, in the manner described by Dr. Goodell and Dr. Taylor.

There is one injury to the child which I do not think was particularly referred to by the author. He spoke of the dislocation of the occipital bone which sometimes occurs. In the case of a flattened pelvis, where the head enters in the transverse diameter, it will sometimes happen, where forceps are used, that the pressure of the blades bears directly upon the forehead and upon the occiput. This will be tolerated for a certain length of time, but, when continued, the pressure ultimately affects the medulla oblongata. It is then difficult to get the child to breathe, the respiratory sense being destroyed, and often the child is born dead, as the result of such pressure. It is always well to be careful that, when the blades of the forceps cannot be applied to the sides of the head, they are applied in the oblique diameter.

With reference to the fracture of the clavicle, it sometimes happens that this injury is due to direct pressure; more frequently, according to Ruge, it is due to the introduction of the hand into the vagina to bring down an extended arm. If the pelvis is small, the vagina rigid, and there is insufficient room for the hand, as the result of pressure upon the shoulder, the clavicle is apt to bend like a bow, and break in the middle.

In a well-conducted labor, the arms should not become extended above the head. In cases where this

does take place, we know the directions that are given to draw on the elbow and push the arm over the face, but where the space is small you cannot always press the arm around the front of the face in the limited time required to extract the child alive. In these cases I think that we are justified in breaking the arm to accomplish delivery. Cases of true dislocation are probably exceedingly rare, at least we have no evidence of cases where the lesion has been demonstrated by dissection, but separation of the epiphyses closely resembles dislocation backward or forward, and until dissections were made, dislocation was considered a common accident. There are one or two points in regard to separation of the epiphyses that are of interest. As a consequence of this fracture, Küstner has shown that the cartilaginous portion of the bone is rotated outward by the action of the infra- and supra-spinatus and the teres minor muscles, while the shaft of the bone is rotated inward by the pectoral muscle, the latissimus dorsi, and the teres major. If the position of the arm is not rectified and union is allowed to take place, the movements of the arm will be more or less affected. Both external and internal rotation can then be accomplished only to a slight extent. Separation of the epiphyseal end of the humerus closely simulates paralysis, and some recent writers have gone so far as to assert that all cases of supposed paralysis of the arm are really cases of this injury. This is, however, not always the case. Last summer I attended an excitable primipara, who, early in labor, passed into a maniacal condition which necessitated keeping her under an anæsthetic. After the chloroform had been kept up for two or three hours, the cervix was partly dilated, and not wishing to continue the chloroform, for the immunity which attends its use in labor does not apply to its prolonged administration, I put on the forceps before dilatation was complete, and with considerable difficulty extracted the head through the cervix, the vagina, and through the vulva. The perineum did not tear, but the moment the head escaped, the vaginal orifice closed down tightly on the neck of the child, and I was compelled to introduce two fingers into each axilla to complete the delivery. After the birth one arm was found to be paralyzed. As I knew these have been recently asserted to be cases of epiphyseal separation, I examined the arm with great care, but failed to find the slightest evidence of fracture. There was no pain. There were no evidences of brain disturbance, although the pressure of the forceps had been continued for a long time. The galvanic current was applied to the arm, frictions were employed and it was kept warm, and in about ten weeks the child began to move its arm, though recovery is still far from complete.

To pass over the other points referred to, I should like to say a few words in regard to extraction in breech cases. It is nearly impossible where the arm has been bent behind the neck of the child to extract the arm without fracture. Then why not fracture the arm? Is the physician responsible if this accident occurs as the result of efforts to release the member? I should say, no, but he is responsible for the displacement of the arm behind the head. If he leaves the body alone and does not twist the trunk, the arm will not remain extended. The child does not spontaneously flex its arm and place the forearm underneath the occiput.

There is a case recently reported by Englebach which I would add to the list of accidents. In this case the child was born with an enormous swelling of the scrotum, due to an effusion of blood into the tunica vaginalis of each side.

I have taken some interest in the questions connected with the extraction of the breech when both extremities were reflected upward, and I wish to reiterate what I said two or three years ago with reference to the use of forceps to the breech. In a recent brochure Küstner condemns this method, but confesses to have never tried it. We all know that in the exercise of the usual method, a person with strong fingers is capable of exerting a great deal of force which bears to a great extent on the sacro-iliac synchondroses, and under these circumstances rupture of the sacro-iliac joint is likely to take place—a rupture which may be followed in after life by the development of the Nægelé deformity. I think that the application of the forceps to the breech is easier than a person who has not tried it would suppose. I speak of cases where the breech has reached the floor of the pelvis. Here it is not necessary to use a great deal of force. If the breech is brought down to the perineum and then allowed to recede, and this is continued until physiological softening of the pelvic floor and perineum takes place, a very moderate degree of force is required. I think that the use of the forceps under these circumstances is attended with less risk to the child than the employment of the fingers or the blunt hook. I have succeeded with the forceps in three cases where the fingers had been used in vain.

I do not feel like occupying any more of the time of the Society. I would say, in conclusion, that this is a subject to which too much attention cannot be given, for woman after passing through the discomforts of the period of gestation, and the perils of labor, is entitled to the only reward that it is possible to give her, that of having a living child, sound in body and limb; and anything that will contribute toward the prevention of such a record as we have heard to-night is certainly worthy of the attention of any body of scientific men. At the present time the public hold us responsible if we allow a patient to die of puerperal fever. It would probably intensify our interest in the subject if the public were to take a similar position with reference to dead and injured children.

Dr. Wharton Sinkler said: A very large proportion of the cases of paralysis that I have met with in infants, have followed instrumental or prolonged and difficult labors. The most frequent form that we meet with is facial paralysis, either unilateral or bilateral. This generally results from the pressure of the forceps upon the facial nerve or upon the mastoid process. Facial paralysis may, however, result simply from the impaction of the child's head in the pelvis without the use of the forceps.

Hemiplegias are often met with in the newly born as a result of the use of the forceps. A few days ago I saw a child with right hemiplegia, and the mother stated that the child had been delivered by forceps, and that immediately after birth there was a deep depression behind the left ear. I found upon examination of this child, who was now sixteen months old, that a depression still existed in the left mastoid process. There was right hemiplegia present. The right leg was spastic and the

movements of the arm limited and incoördinate. Spastic paralysis of what is sometimes called double spastic hemiplegia very frequently occur in children who have been born by the breech. These conditions generally persist during life and are associated with a feeble condition of the intellect.

Professor Parvin has referred to injuries to the sterno-cleido-mastoid muscle. I have seen cases where the child has lost power in all the muscles of the neck so that it was unable to support the head. Some of the cases have been delivered by the breech and considerable traction made. Some have followed delivery by forceps perhaps from pressure on the spinal accessory nerve, or perhaps from extravasation of blood. In the case of paralysis following difficult or instrumental labors, the lesion is often an extravasation of blood over the motor convolutions, a meningeal hemorrhage. If the amount of the extravasation is great, the prognosis is, of course, bad, but in some of the cases, especially where there is monoplegia, where there is paralysis of one arm alone, the child entirely recovers the use of the limb; and in facial paralysis recovery, as a rule, occurs in a few days, but the condition may persist during life.

DR. W. GOODELL said: I present for inspection, this evening, a specimen of firmly united fracture of an infant's humerus, of which I am not ashamed, but rather proud; for by the fracture I saved the child's life. It was a case of breech presentation, where the heart's action was failing, and the ominous convulsive movements of the child were giving out, which indicates the near approach of death. The arm was up alongside the child's head, and, if I had had more time, I could have brought it down without injury; but every second was precious. So I snapped the arm, and quickly delivered a living child. It died a few months afterward, of cholera infantum, and the mother, knowing my interest in the case, allowed me to obtain the specimen. I have reported elsewhere a unique case, where fracture was produced by the maternal forces. The vertex presented, the pains were strong, the passages ample; but the head did not descend. Suddenly, during a severe pain, a hand shot out of the anus, without tearing the perineum. While I was gazing on in amazement, another pain suddenly took place. There was an audible snap, the hand as quickly disappeared from the anus, and the child was born with a fracture of the clavicle. The rent in the vagina was sewed up, and the fracture dressed with adhesive strips. The vaginal wound healed up perfectly, and the child recovered without deformity. This remarkable accident I attribute to the arm being thrown across the nucha. The protruding hand perforated the vagina, and was button-holed there. Then the advancing body forcibly dragged the arm down the back of the child, and the clavicle was fractured by the twist or strain it got.

In a case seen with my friend, Dr. James F. Wilson, fracture of the clavicle, and of the skull also, occurred. It was an exceedingly difficult case. She was delivered in her first labor by craniotomy, by Dr. Wilson, in conjunction with the late Dr. Parry. In this, her second labor, after using the forceps ineffectually, we turned, and delivered in a very few minutes, by vigorous traction, and by very great pressure from above. The fractures were caused by the projection of the sacro-iliac promontory. The child recovered perfectly.

I have repeatedly seen facial paralysis; but in instrumental labors it has occurred only when the blades of the forceps were not applied exactly to the sides of the child's head. Dr. Parvin speaks of the child living a few hours after the performance of craniotomy. It was to such an occurrence that we owe the travels of Mungo Park, who was a physician, but who, early in his professional career, was so disgusted by this accident that he gave up practice. In his case the infant lived to manhood. With regard to head-last labors, I have tried to deliver the breech by the use of the forceps on the buttocks, and have succeeded with them, but they are liable to slip off. I therefore always bring down a leg in breech cases, and then I have command of the situation. The force of traction which the neck will bear is uncertain, and doubtless varies greatly; but I believe that the man who, in trying to save the child, breaks the most necks, saves the most children, and I respect him accordingly. Such labors are always very dangerous to the child; the percentage of deaths is a very large one. I look on a child in breech presentation as a child drowning, to whom help must be sped—help at all hazards. It is emphatically a case of "neck or nothing," and we must not sacrifice the life of the child to any sentimental considerations about breaking its neck.

One point that, perhaps, does not come strictly under injuries to the fœtus, but may be considered here, since it causes the death of the fœtus, is pressure on the cord, prolapsed or wound round the neck, by one of the blades of the forceps, and especially by the occipital one, when the blades are not applied exactly to the sides of the head. I am sure this has occurred at my hands. An annoyance in cases of face presentation is the subsequent unnatural position of the child, which for days will lie with its head greatly extended, though it ultimately takes the natural position.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, November 3, 1887.

THE PRESIDENT, A. JACOBI, M.D., IN THE CHAIR.

DR. JOSEPH D. BRYANT read a paper on

HOW CAN THE PROFESSION AID THE BOARD OF HEALTH?

As to the relations which should exist between the medical profession and the Health Department, he said that there ought to be complete harmony in all matters pertaining to the public health. In the past this had by no means always been the case, and the two bodies had for the most part been much greater strangers to each other than should have been the case. He believed, however, that each should labor with common purposes, the prolongation of human life and the alleviation of physical suffering. It was the province of the Board of Health to deal more particularly with the prevention of disease, and of the medical profession with its treatment; but the preventive measures of the Board ought, of course, to receive the active and cordial cooperation of the profession.

All the medical sanitary inspectors are now detailed to the department of contagious diseases, and it is their duty to visit at once the locality of any case of contagious disease reported to the Board, and see that

proper measures for isolation, disinfection, etc., are promptly and thoroughly carried out. When, in any instance, it is found that suitable medical treatment cannot be pursued, or that isolation of the patient cannot be secured, they advise that the case be removed to the hospital.

In the department of contagious diseases are included the bureaus of vaccination and contagious diseases in animals, and employed in the latter are expert diagnosticians in this special field. Convenient and comfortable means are provided for the transfer of patients to the hospitals of the Board, and the admirably constructed Willard Parker Hospital at the foot of East Sixteenth Street, is fitted up with all the modern appliances for the successful treatment of disease. It has accommodations for seventy-five or one hundred cases of diphtheria and scarlet fever, and efficient house-physicians and an excellent medical board. The reception hospital is also under the supervision of the same medical board. On North Brother's Island are the fine new smallpox hospital and five pavilions, each with accommodations for twenty-five or thirty patients, for contagious diseases other than smallpox. On this island there is also considerable unoccupied space on which temporary structures can be erected in case of emergency. Every provision is thus made for the comfort and welfare of patients suffering from every variety of contagious disease.

The Board is at this time paying special attention to the matter of contagious disease, and the urgent need of this is sufficiently attested by the fact that from the 1st of January to the 30th of September there were no less than 1575 deaths from diphtheria reported in the city. There is entirely too much indifference on the part of the public to such affections as diphtheria; while a single case of a disease like cholera, the prevalence of which would seriously interfere with the business interests of the community, would at once cause profound excitement and receive the greatest possible attention. The Board has great odds to contend against, as it is estimated that from 15 to 25 per cent. of the cases of contagious diseases occurring in the city are never reported by the medical attendants in charge of them. It is estimated, also, that from 25 to 30 per cent. of the births are unreported.

He then proceeded to answer the question, How can the Profession aid the Board of Health? This can be done signally, he thought, in the following ways:

(1) By reporting at once all varieties of nuisances dangerous to life and health.

(2) By promptly reporting all forms of contagious disease. In this way many valuable lives could be saved and epidemics could be averted.

(3) By enforcing strict isolation and employing proper disinfectant and antiseptic measures in cases of contagious diseases.

(4) By reporting all cases in which isolation cannot be secured or proper medical treatment carried out.

(5) By visiting the Willard Parker Hospital, and thus being able to speak from personal observation of the advantages which it affords.

(6) By being careful not to send patients with contagious diseases to the dispensaries.

(7) By heartily coöperating with the medical inspectors of the Board of Health in any case in which the latter are met with.

(8) By reporting all food or drink adulterations coming under notice.

(9) By reporting any instance observed of decaying fruit or other kind of unwholesome food offered for sale.

(10) By reporting all defects in plumbing, light, and ventilation observed in houses visited.

(11) By paying special attention to the sanitary condition of the homes of patients.

(12) By promptly reporting all births. This is of special service in securing the more general vaccination of infants.

Dr. E. G. Janeway said that the suggestions made by Dr. Bryant covered most of the matters in which the profession could be of service to the Board of Health. The importance of reporting all cases of contagious diseases is evident to all, and the statistics of disease can never be made accurate until every physician is willing to report every case he meets with. He has known the recurrence of smallpox in New York to be more than once due to unreported cases of the affection. The benefit of reporting all cases of typhoid fever, for instance, has been repeatedly shown in England in enabling the authorities to trace the origin of the trouble to contaminated milk. The relation of contagious diseases to the public schools is a matter of vital importance, and it is absolutely essential that the school officers should be promptly informed of the existence of a contagious disease in any family a member of which is a scholar.

It is also highly desirable that physicians should report any cases of *suspected* contagious disease coming under their observation. Public opinion on sanitary matters is moulded by the medical profession, and it should be the aim of the latter to inspire the public with confidence in the Board of Health. Otherwise the influence and efficiency of the Board will be seriously impaired. The good work done by the bureau of vaccination has undoubtedly been the means of successfully controlling smallpox in the city during the last few years, and it is essential that this should be continued in the future, and that even more vaccinations should be made than in the past. When, as is occasionally the case, unfavorable circumstances attend vaccination, it is not unfrequent to have physicians intimate (and usually without adequate reason), either that the virus used is bad, or that it is the vehicle for the transmission of syphilis. Such slighting remarks do a great deal of harm, and he has known them to be the means of preventing a large number of vaccinations, as reports of this kind are apt to spread through tenement-houses.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, October 28, 1887.

The President, James Perrigo, M.D., in the Chair.

SARCOMA OF THE FEMUR.

Dr. Bell exhibited a patient whose right thigh he had amputated three weeks before for sarcoma of the lower third of the femur. The wound united by first intention throughout, and the patient was now well.

The wound healed under two dressings; bone drains were used. The following is the history of the case:

J. W., æt. eighteen, was admitted into the Montreal General Hospital, September 30, 1887, suffering from a large tumor involving and completely surrounding the lower third of the right femur. The tumor began as a small, movable, painless nodule on the anterior surface of the bone immediately above the knee-joint. It grew rapidly and soon completely encircled the bone. He walked about as usual until the end of June, when he began to suffer acute pain in the swelling. In August he was admitted into hospital, when the tumor was diagnosed as a periosteal sarcoma, and amputation was advised. His friends would not consent to any operative measures, and he left the hospital. He returned again on the 30th of September in a very grave condition. The tumor had increased very much in size and the patient was greatly emaciated; his pulse was constantly as high as 120–140, and his temperature ranged from 101°–103° F. The surface of the tumor was red and inflamed, and the leg below very œdematous. On October 3d, amputation was performed by the circular method through the upper third of the thigh. The recovery of the patient was rapid and particularly satisfactory. The stump was dressed for the first time on the eighth day. The temperature never rose above 98.8°; and on the 27th of October (twenty-four days after the operation) he was discharged with a perfectly sound stump. An examination of the tumor showed that it was a round-celled sarcoma occupying the lower third of the femur, but not extending into the interior of the bone. The synovial pouch beneath the quadriceps extensor muscle was filled with pus. The epiphysis separated easily from the shaft, and an inflammatory condition was found in the space between. Dr. Bell regarded this case as a fair sample of the results obtained by dry dressing and bone drainage.

Dr. Roddick congratulated Dr. Bell on the good result of the case. In such cases he preferred removing the whole bone, as then there is less chance of recurrence. With regard to the use of bone drains, he had some years ago used them extensively, but had given them up. Recently he had tried them again, but he found that they absorbed too rapidly, and that, although the drain was absorbed and the wound closed up, still there was often a collection of fluid left behind, which had to be let out.

Dr. Shepherd had also, several years ago, used bone drains, but had abandoned them because of their uncertainty, some absorbing too rapidly and others not at all. He preferred rubber drains. His plan was to change the dressing twenty-four hours after operation, remove and shorten tubes to less than half an inch, and then not make the second dressing for a week or ten days, according as the case progressed. The reason he examines the wound and removes the tube at the end of twenty-four hours, is because the oozing from the wound is greatest during the first day, and also because the tube is not infrequently becomes plugged with blood-clots and then, of course, renders it useless. He had had remarkably good results in his amputations by this method, and mentioned a case of amputation of the thigh performed in a very old man for senile gangrene, which healed by two dressings in three weeks. Neuber, who introduced bone drains, now never employs any drain at all, but stuffs the wound with iodoform gauze for two or three days, and then makes use of secondary suture. His results, according to his published cases, were excellent.

Dr. Armstrong inquired whether any of the surgeons had used Levis's solid rubber drains. They consist of a number of pieces of solid rubber rods placed like catgut in the wound and are better than hollow tubes as they never get plugged with blood-clot.

OSTEOTOMY OF THE TIBIÆ.

Dr. Bell also exhibited a patient, æt. three years, on whom he had performed osteotomy of the tibiæ for incurving due to rickets. He had performed MacEwen's operation with most satisfactory results. There was only one dressing applied.

Dr. Roddick said that three years was too young to perform this operation and that he himself never operated in such cases under nine years, but used apparatus to correct the deformity. Apparatus is of little use for the cure of knock-knee, but answers well for bow-legs. He thought that subcutaneous fracture is preferable to MacEwen's operation in bow-legs and he had had excellent results from this method of treatment.

Dr. Gurd said that in cases of bow-legs of very young children the deformity was frequently corrected by improved hygienic conditions and good food.

STRONGYLUS FILARIA.

Dr. Johnston exhibited a microscopic section through the lung of a sheep in a case of broncho-pneumonia where great numbers of the strongylus filaria were found in the alveoli, which were filled with exudate. There were also severe bronchitis and peribronchitis of the smaller tubes. The adult worms were not found within the bronchi, having probably been coughed up. The embryos were not able to develop in the lung.

RINGWORM OF THE NAIL.

Dr. Johnston also exhibited a microscopic section of a nail showing parasitic onychia. The specimen was sent him by Dr. Bell. The chains of trichophyton were seen in moderate numbers on the deeper layers of the nail and between the nail and its bed. A mass of dry porous tissue over the bed of the nail was free from the parasite.

Dr. Bell said the specimen was taken from the thumb nail of a girl æt. twenty years. She had accidentally cut the nail about the middle a year ago, a small brown spot immediately commenced to grow at this point and when he saw her first the nail was raised from its bed to the extent of half an inch by a hard, dry cancellated structure resembling cancellated bone. There was no ringworm in any part of her body nor had she been exposed to contagion from any known source.

Dr. McConnell read a paper on

ACETANILID.

After describing the history and actions of this drug, which is best known by the name of antifebrin, he detailed his experience of the remedy derived from its administration in twenty cases. In every case it had been given with benefit; he had given it in typhoid fever, pneumonia, puerperal septicæmia, and erysipelas.

In typhoid fever it is most useful in relieving the intense headache of the early stage of that disease. The temperature was reduced in two to four hours 5° or 6°. In all his cases it began to fall within fifteen minutes after the administration of the drug. He gave it in doses of from six to fifteen grains. Three doses in twelve hours were sufficient. He found that it stimulated the vasomotor system, relieved pain of a neuralgic character, promoted sleep, and diminished the rate of the pulse.

Dr. Proudfoot said antifebrin is very useful in reducing the inflammation and relieving pain in cases of iritis.

Dr. Stewart had only used antifebrin in two cases of locomotor ataxy for the relief of the lightning pain with excellent effect. He thought that it is not yet decided whether it is useful in fever; it certainly has the effect of destroying the oxyhæmoglobin and thus reduces the patient's resisting power.

Dr. Reed had tried the drug for the relief of neuralgic pain and had found not the slightest result; he thought that the drug had had its day.

Dr. McConnell, in reply, said that the destruction of oxyhæmoglobin only takes place when the drug is given in poisonous doses.

Several members stated that they had found the drug of no use at all in erysipelas.

NEWS ITEMS.

An Authoritative Society.—In an editorial in the *Maryland Medical Journal* of November 5, 1887, a reference made by Dr. W. C. Van Bibber, in a recent address before the Baltimore Academy of Medicine, to the College of Physicians of Philadelphia, is commented upon as follows:

Dr. Van Bibber has referred to the value of an authoritative society to the profession and to the State. Dr. Van Bibber has happily selected as his model the College of Physicians of Philadelphia, which combines in its purposes and in its work all that is useful in a scientific medical organization. Were there in all our large cities medical organizations working so harmoniously and efficiently in the promotion of the higher aims of medicine and in guarding the interests of society as the College of Physicians, it would be a cause for professional congratulation among a large class of physicians who never fail to endorse methods or purposes which advance the cause of human good. We have before us at this time another illustration of the high aim of the College of Physicians in the shape of a report of a Committee appointed by the College on October 5, 1887, to investigate the efficiency of our quarantine arrangements for the exclusion of cholera and other epidemic diseases. The work performed by the Committee of the College of Physicians in the preparation of this report has been both laborious and painstaking, and the conclusions reached, if properly considered and carefully enforced, cannot fail to work a far-reaching public benefaction.

The thorough investigation of this important subject at this time by the College of Physicians assumes a commanding position and enforces upon professional attention the importance of a cöoperation among the medical societies of the United States, looking to the early adoption of a uniform and efficient quarantine of all exposed ports. In fact, in a resolution offered by the Committee of the College, the authority to issue an address to the medical societies of the country, and seek their cöoperation in this respect, was adopted. The initiative taken by the College of Physicians in this matter was not only timely, but in the extreme humane. It has been shown that our Atlantic ports are totally unprovided for the safe and humane treatment of cholera-infected emigrants, and that unless something be done to improve our quarantine regulations, great suffering and injustice may be imposed upon emigrants arriving from cholera-infected countries.

The great authority of the College of Physicians leading in this matter cannot result in other than good to the people of our country, and to those who seek an asylum on our shores.

Corrosive Sublimate and Quinine.—Powell calls attention to the fact, not generally known, that when moderately concentrated solutions of corrosive sublimate and a quinine salt are mixed, a precipitate is thrown down, immediately or after some time, consisting of a double chloride of mercury with the alkaloid. Prescribers and dispensers should make a note of the fact.—*Pharmaceutical Journal.*

Typhoid Fever Cases in Lapeer City, with Sources of Contagion.—Dr. H. McCall has forwarded the following account of a small typhoid outbreak to the Michigan State Board of Health:

About September 1, 1887, Myron Gardner, railroad employé, came from the South, sick with fever, to his father's home. His case was supposed to be malarial. No care was exercised with stools in the way of disinfection, but they were thrown into a privy vault in the rear of the house, and in close proximity to the well. Wash-water was thrown on the surface of the ground, which was very dry at the time. About the 7th or 8th of September, a copious rain fell and soaked the sandy soil; and on the 14th, William Gardner and wife, father and mother of Myron, and E. D. Gardner, a brother, were attacked with fever. On this day I got home from Washington, and found four of them down with a severe type of typhoid fever; and in two weeks Myron's wife and child were attacked; also a child, across the street at Terry's, who had used water from the Gardner well. About the same time, three cases occurred among those in the adjacent Clifford house, south of Gardner's, who also used water from the Gardner well. None of the people from either of these houses were in the Gardner house. In the Walker house, still further south, one case has occurred; and I was at a loss to account for this case, till a few days ago, when the young man said that at the mill where he was working they had used water from the Gardner well for a few days, owing to disarrangement of the pump at the mill. Two others of the mill hands, Anderson and Lester, who used the same water, were attacked about the ame time. Lester is now convalescent; Anderson is dead, as also a child at Terry's. When I took charge of the cases I ordered the discontinuance of water from the Gardner well, and the disinfection of the stools; and no new cases are now reported. People who assisted in taking care of the Gardner and other families, and who used

water from other sources have not been attacked. Clearly Mynne Gardner brought the fever home, the well becoming infected after the first rain from slops and privy drainings and the other cases got their seed from the water.

THE CHOLERA IMPORTATION.—The indignation felt by the whole world at the laxity of the New York quarantine finds favorable expression in the *Sanitary News* of October 29, 1887, as follows:

The fact is that the general government should establish and maintain a quarantine system at New York. It should begin at once by prohibiting intercourse with Italian infected ports. It should assume the care of this national question. The Western health boards should call extra sessions, pass resolutions asking the President to put in motion the emergency fund, and begin to take active steps against an active enemy. We, in Chicago, do not fear the swarthy Italians from Palermo, but the health commissioner was busy Thursday morning in hunting them up and endeavoring to get their infected baggage. The period of incubation was twice passed on these immigrants before the notice was received. Their baggage can not be gathered and disinfected, but as this danger is liable to be kept up as long as the Italian line can get vessel into the port of New York, Dr. Koch should get his railway inspection into action again, and endeavor to prevent the importation of the disease and not sale.

CHOLERA IN INDIA.—Cholera has prevailed very extensively throughout India during the present hot season. It has spread northward, westward, and southward. The Northwestern Provinces and Punjab have been severely visited. The disease has broken out in Peshawur, and caused great loss of life. Several outbreaks have been reported from Central India, and seventeen districts of Bombay Presidency have been visited. The town of Bombay has suffered to a slight extent. The disease has prevailed severely in Burma and broken out in Singapore. It has also been reported from Kabul. Beyond India, the disease lingers in some parts of Italy, and a few cases appear to have occurred in Malta. This is, therefore, emphatically a year of active epidemic movement so far as cholera is concerned.—*Indian Medical Gazette*, September, 1887.

PROFESSOR BILLROTH.—The numerous friends of Professor Billroth all over the world will be pleased to learn that his health is thoroughly restored, and that he has resumed his cliniques at the General Hospital, Vienna. On the occasion of his first lecture he received a great ovation. The theatre was crowded with professors and students for a long time before the lecture hour had arrived, and the entrance of Professor Billroth was welcomed with loud and long-continued applause. On their advancing and tendered in the name of his colleagues and the pupils a hearty welcome to the professor's auditorium. Upon this receiving from the latter loud acclamations of applause. In reply, Professor Billroth made some touching remarks, recalling the time when, nearly years ago, he first taught in that place, with colleagues such as Hebra, Rokitansky, Oppolzer, Skoda, Dumreicher, Dittel, Heller, and others, who had all since passed away. He warmly thanked those present for their kindness during his illness, and their reception of him that day. He had not expected to be there again, but he had been snatched from death by the self-sacrifice and devotion of his colleagues. He spoke of the kindness and love which had been bestowed upon him on all sides, and said that he would devote all his strength to the welfare of mankind, the glory of the old Vienna University, and the prosperity of Austria. He then proceeded to speak of the life work of von Langenbeck, and suggested that, in respect to his memory, the meeting should be closed. After this, Professor Billroth took them over his wards, and operated on a case of double harelip.—*Lancet*, October 22, 1887.

AN INTERNATIONAL DICTIONARY OF LIVING WRITERS.—The contemplated publication during the coming year of a work under the above title is announced by M. De Gubernatis, of Florence. It will contain an account not only of the authors of books, but of contributions to journals of various kinds, the aim being to describe the *personnel* of the literary men of to-day.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING NOVEMBER 5, 1887.

FESSENDEN, C. S. D., *Surgeon*.—Detailed as Chairman of the Board for the Physical Examination of Officers of the Revenue Marine Service, November 1, 1887.

MUHL, F. W., *Passed Assistant Surgeon*.—Detailed as the Recorder of the Board for the Physical Examination of Officers of the Revenue Marine Service, November 1, 1887.

BEVAN, A. D., *Passed Assistant Surgeon*.—Relieved from duty at Portland, Oregon, ordered to the Marine Hospital, New York, November 2, 1887.

CARRINGTON, P. M., *Assistant Surgeon*.—Relieved from duty on the Revenue Steamer "Rush," ordered to the Marine Hospital, San Francisco, California, November 2, 1887.

PERRY, T. B., *Assistant Surgeon*.—Relieved from duty at the Marine Hospital, San Francisco, California; ordered to assume charge of service at Portland, Oregon, November 2, 1887.

GOODWIN, H. T., *Assistant Surgeon*.—Relieved from duty at Norfolk, Virginia, ordered to the Marine Hospital, New Orleans, Louisiana, November 5, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 5, 1887.

FITZSIMMONS, P., *Surgeon*.—Ordered to the U. S. Steamer "Marion."

ATLEE, L. W., *Assistant Surgeon*.—Ordered to the U. S. Steamer "Marion."

BATES, N. L., *Medical Inspector*.—Ordered to the U. S. Steamer "Trenton."

BEALE, HENRY G., *Passed Assistant Surgeon*.—Ordered to the U. S. Steamer "Trenton."

WHITE, STEPHEN S., *Assistant Surgeon*.—Ordered to the U. S. Steamer "Trenton."

RILEY, P. M., *Passed Assistant Surgeon*.—Detached from the U. S. Steamer "Trenton," and wait orders.

ACHESON, RICHARD, *Passed Assistant Surgeon*.—Ordered to the U. S. Receiving Ship "St. Louis."

THE MEDICAL NEWS *will be pleased to receive early information of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or notices should be marked.

Letters, whether worthy for publication or private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

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AMERICAN PUBLIC HEALTH ASSOCIATION.

FIFTEENTH ANNUAL MEETING.

THE ANNUAL ADDRESS.

Delivered Tuesday, November 8, 1887.

BY GEORGE M. STERNBERG, M.D.,

PRESIDENT.

(Concluded from page 561.)

As I have already intimated, the exotic pestilential diseases to which I have referred are the levers which move corporations to make necessary sanitary improvements. But for sanitarians, aside from their effect in this way, they are of secondary importance. The number of victims which they claim is a small matter compared with the number who succumb to certain indigenous or naturalized infectious diseases which are equally subject to control by well-known sanitary measures. The chief aim of the American Public Health Association should be to ascertain what measures are most effectual for the restriction of their endemic maladies, such as typhoid fever and the malarial fevers, and for the banishment of all diseases in which the contagion is given off from the persons of the sick, such as scarlet fever and smallpox. So far as diseases of the class last mentioned are concerned, we may safely say that we know how they may be banished from a community, viz., by isolation of the sick and disinfection of all infectious material; and in the case of smallpox, by vaccination. Our main mission, therefore, is to insist upon the thorough execution of these measures.

But our mission does not cease here. We have not only to teach the American public how to guard against infectious diseases by quarantine restrictions, isolation of the sick, disinfection, and municipal sanitation, but also to teach them the principles of personal hygiene. Not only will their individual susceptibility in the presence of an epidemic depend largely upon their personal habits and mode of life, but we must show them how often organic and functional diseases of the various organs essential to life are induced by excesses in diet, improper food, the habitual use of spirituous liquors, etc. I conceive that a most important part of our work in the future should consist in popularizing information of this kind. The noble example set by our generous colleague, Mr. Lomb, of Rochester, should be followed by our Association, if its finances permit, or at least we should present the subject to philanthropists who, like Mr. Lomb, may desire to be guided by our counsel in their efforts to do good to their fellowmen. As a matter of fact, our limited means will not justify us in offering prizes for essays on sanitary subjects, and the most that we can afford is to print and distribute at cost such essays as may seem suitable for popular distribution.

In another direction, however, we may accomplish much good with comparatively small amounts of money, whenever our treasury will admit of it. I refer to special investigations in sanitary science, committed to expert investigators who are willing to devote their time to the work, and who would ask only for such sums as might be necessary to cover the actual expenditures for apparatus, material, etc.

The exact knowledge which has been obtained during the last decade with reference to the etiology of the infectious diseases, has been promptly applied in a practical way by sanitarians; and every addition to our knowledge in this direction is of the greatest importance to sanitary science, which, so far as we can see, will reap far more benefit from an exact knowledge with reference to the essential characters of each specific disease germ than can be hoped for by the clinician.

It is not creditable to us as a nation that so small a share of the progress in this direction is due to American investigators. In the absence of any department of the National Government having the power and disposition to support investigations in this field of science, the few who have pursued bacteriological studies in this country have worked under disadvantages which were not only discouraging, but absolutely incompatible with the most efficient work and fruitful results. But the future is more hopeful. Individual munificence, in several of our large cities, has supplied the means which should have been provided long since by the National Government, for pursuing investigations in bacteriology and in experimental pathology.

In Baltimore we have a well-equipped bacteriological laboratory under the direction of the able professor of pathology of the Johns Hopkins University. In New York, Boston, Philadelphia, and, I believe, in several other cities, bacteriological laboratories have been established in connection with well-known medical schools.

In Brooklyn, the Hoagland Laboratory, now in process of construction, under the immediate supervision of the gentleman who provides the funds required for the building and its equipment, will supply all of the facilities, both for students and for advanced investigators, which can be found in the best equipped laboratories of Europe. I am informed, also, that our colleagues from the State of Michigan who are always in the front rank in urging upon their legislature measures which will advance the sanitary interests of the State, are making an effort, which is likely to be successful, to establish a bacteriological laboratory in that State. We have to thank one of our colleagues from the State mentioned for a most important discovery in the field of sanitary science. I refer to the discovery of tyrotoxicon by Professor Vaughan. With a well-equipped laboratory under his direction there is good reason to

believe that this discovery, so creditable to American science, would not stand alone to the credit of the good State of Michigan.

Our Association has already taken the initiative in encouraging, and assisting, from its slender treasury, investigations in sanitary science. The Committee on disinfectants, appointed at the St. Louis meeting, in 1884, has made an extended experimental research with reference to the value of various agents for the destruction of disease germs. The final report of this Committee will be submitted at the present meeting. I say final, because in my judgment all the necessary data are now at hand for determining the agents most useful for disinfecting purposes under various circumstances, and I think the conclusions of the Committee may be accepted as a safe guide for future practice. It is true that more work can be done to advantage in this direction, and it will be desirable to test from time to time new agents which may be suggested for disinfecting purposes; but the main object of the Association has been accomplished, and we now know what agents can be relied upon for the destruction of disease germs of various kinds, and in what proportion these agents must be used to be efficient.

In consideration of the limited means at our disposal for encouraging the scientific investigation of sanitary problems I would suggest that the Association raise a special fund for this purpose, by calling for contributions from its members, and from others who may be willing to aid us in our efforts in this direction. If you approve of this suggestion, I trust that some member will introduce the necessary resolutions.

One of the subjects which might be taken up by a Committee appointed for the purpose and aided from the special fund would be a biological investigation of the water supply of towns and cities in the United States. Evidently such an investigation would be a protracted one, and it would be advisable to begin with those towns which have a notoriously bad water supply. Perhaps it could be arranged that a portion of the expense, at least, would be paid by the town or city whose water supply was examined, as the inhabitants of such town or city would be especially interested in the results of the investigation. Another question of the greatest interest to us is that which relates to the possibility of protecting individuals from fatal infectious diseases by inoculations with an attenuated virus.

Protection from smallpox is no longer a solitary instance of prophylaxis by inoculation. In anthrax, in swine-plague, roguet, and in pleuro-pneumonia, protective inoculations have been practised upon a large scale, and the value of the method is fully described. The evidence in favor of Pasteur's inoculations for the prevention of hydrophobia is such that we can scarcely doubt that it has a relative value, notwithstanding the considerable number of deaths which have occurred among those who have been inoculated. The recent report of the English Commission, made after a thorough investigation, is favorable to the method, which may, perhaps, hereafter, be modified so as to give still better results.

In the various infectious diseases of the lower animals which have been studied during recent years, including those forms of septicæmia which are only known to us by laboratory experiments, we have much evidence that protective inoculations with an attenuated virus may be successfully practised. And there is good reason to hope that in all diseases in which a single attack protects from future attacks, protective inoculations may be practised when once we have succeeded in isolating and cultivating outside of the body the specific infectious agent. We know already four methods by which the virulent potency of disease germs may be attenuated, viz., by exposure to oxygen, by exposure to heat, by exposure to the action of certain chemical agents, and by passing through the body of certain animals.

The last mentioned method is that practised by Pasteur in attenuating the virus of rouget. He finds that the virulence of the microbe is diminished by passing it through a series of rabbits and that by this means an attenuated virus suitable for protective inoculations in swine may be obtained.

The possibility of attenuating a virus by exposure to the action of certain chemical agents was discovered by myself, in 1881, in the course of a series of experiments upon disinfectants in which the virus used was the blood of a rabbit just dead and containing the micrococcus found in the buccal secretions of man, which I have named *M. Pasteuri*.

Among the diseases in which there is good reason to hope that a method of prophylaxis by inoculations with an attenuated virus might be successfully practised, if we could once succeed in isolating and cultivating the specific germ of the disease, is yellow fever, a disease in which, as a rule, a single attack protects.

As you know, it has been claimed by both Dr. Domingos Freire, of Brazil, and by Dr. Carmona y Valle, of Mexico, that the yellow fever germ is discovered, and that a method of prophylaxis by inoculation has been experimentally demonstrated. As I have just returned from a special mission, the object of which was to investigate the claims of these gentlemen, you will naturally expect to hear from me at this time, with reference to the results of my investigations. I regret to say that I am unable to gratify you in this natural expectation. My orders explicitly direct "me not to make publication of my investigations and of the conclusions reached by me," until I have submitted my final report to the President of the United States.

I have already occupied so much time in speaking of matters which I consider of prime importance that I cannot attempt to make any general review of recent bacteriological researches which have a bearing upon public hygiene. As a matter of fact, all additions to our knowledge of pathogenic microörganisms are of special importance to us as sanitarians, and it is now generally recognized that the only safe basis for practical sanitation is that which is afforded by an exact knowledge of the etiology of infectious diseases, and of the biological characters of the specific infectious agents in these diseases. Since the importance of these studies has been generally recognized, and the methods of research have been perfected, the number of trained workers has rapidly increased, and at present the greatest activity prevails in the laboratories of Europe. This is shown by the number of memoirs relating to experimental investigations made in this department of science which are constantly appearing in the journals devoted to medicine and hygiene in all parts of the

world, but especially in Germany, in France, and in Italy. The *Jahresbericht* of Baumgarten, for the year 1886, contains abstracts of 533 papers relating to micro-organisms. With reference to *cholera*, I may say to you that recent researches give support to the conclusions of Koch as to the pathogenic *rôle* in this disease of the spirillum discovered by him in the intestines of cholera patients. Its constant presence in this disease seems to be demonstrated, and it is now generally admitted by bacteriologists that there are definite characters by which it may be distinguished from similar organisms obtained from other sources, such as the Finkler-Prior spirillum, and the cheese spirillum of Deneke, which closely resemble it.

Lustig, Director of the Cholera Hospitals at Trieste, examined the dejecta in 170 cases of cholera, and found the spirillum of Koch in every case: on the other hand, the bacillus of Emmerich was found in only 40 out of the whole number of cases examined. Tizzoni and Cattani also found Koch's spirillum in the contents of the intestine in 24 cases examined by them during the epidemic at Bologna in 1886. At Padua, also, researches made by Canestrini and Morpurgo gave the same result, the spirillum was constantly found in the dejecta in recent cases. These observers state that the cholera spirillum retains its motility and reproductive power for a considerable time in sterilized distilled water. They were able to obtain cultures after two months from such water. This important fact has been verified by Pfeiffer, who found, however, that in the presence of common saprophytic bacteria the cholera microbe soon died out. Hueppe has shown that the cholera spirillum forms reproductive elements, which he calls arthrospores. These are not so readily destroyed by desiccation as are the fresh bacilli, but they have nothing like the resisting power to heat and chemical agents which characterizes the endogenous spores of the bacilli. The exact proportion in which various disinfecting agents are destructive of the vitality of the cholera spirilla, has now been determined with great precision, and will be stated in detail in the report of the Committee on Disinfectants for the present year. This Committee has also made extended experiments of the same kind in which the typhoid bacillus, and various other pathogenic organisms have served as the test of germicide power. The chemical products developed in cultures as a result of the vital activity of the cholera spirillum have been studied by Bitter, Buchner, and Cantani. The last-named author claims to have demonstrated the presence of a poisonous ptomaine in cholera cultures, which, when injected into the peritoneal cavity of dogs gives rise to symptoms resembling those of cholera. A recent observation of value is that of Bujwid, who finds that *bouillon* cultures of the cholera spirillum have a peculiar chemical reaction, by which they may be distinguished. According to this author, the addition of a five to ten per cent. solution of hydrochloric acid to such a culture gives rise, within a few minutes, to a rose-violet color, which subsequently, when exposed to light, changes to a brownish shade. The reaction does not occur in impure cultures. The Finkler-Prior spirillum is said to give a similar reaction after a longer time, but the color first developed is of a more brownish hue.

The question of the etiological *rôle* and biological characters of the typhoid bacillus discovered by Eberth in 1880, has occupied numerous bacteriologists during the past year, and very important additions have been made to our knowledge with reference to this organism. The researches of Beumer and Pieper, of Seitz, and of Fränkel and Simonds, are especially worthy of notice, but time will not permit me to give an abstract of the results reached by these and other investigators. I can only say, in a general way, that the earlier researches of Eberth, Koch, and Gaffky, are confirmed as regards the presence of this bacillus in the intestinal glands, the spleen, and other organs in typhoid cases, and that very little doubt exists among bacteriologists as to the etiological relation of this organism to the disease in question, although no satisfactory proof by inoculation in lower animals has yet been found. This, however, is not surprising, inasmuch as we have no evidence that any of the animals experimented upon are liable to contract the disease, as man does, by drinking contaminated water.

According to Wolffhügel and Riedel, the typhoid bacillus and various other pathogenic organisms tested, retain their vitality for a long time when preserved in ordinary well or hydrant water, and even undergo a considerable development in such water. Frankland, also, has found that certain pathogenic bacteria tested by him increased rapidly in numbers in the water of the Thames, and even in distilled water. Meade Bolton, on the other hand, found that micrococcus tetragonus, staphylococcus aureus, the typhoid bacillus, and the anthrax bacillus, not only did not increase in number in sterilized water, but soon perished, while certain non-pathogenic species commonly found in water, increased rapidly in numbers, in sterilized distilled water. A more recent research is that of Kraus, who employed well water and hydrant water from the city water works of Munich, which, without being sterilized, was infected with pure cultures of various pathogenic organisms diluted with distilled water. The infected water was kept during the experiment at a temperature of 10½° C. (51° F.). Plate cultures were made from day to day. The results were as follows: the typhoid bacillus had disappeared by the seventh day, the cholera spirillum could not be found in plate cultures after the second day, the anthrax bacillus had disappeared at the end of four days; in the meantime, the ordinary water organisms had increased enormously in number. From these experiments, considered in connection with those of Bolton and of Wolffhügel, Kraus concludes that the rapid destruction of pathogenic bacteria in non-sterilized water is a direct result of the action of ordinary water-organisms. If this be true, it is evident that these water-bacteria are conservative from a sanitary point of view, and that the biological test of drinking water, which gives the number of colonies which are obtained from a given quantity, has no special value in the absence of an exact statement of the kind of bacteria and their pathogenic potency. The time has come when we must demand that those who undertake the biological examination of water with reference to its potability shall give some more definite information than that a certain number of colonies were found, some of which liquified gelatine, and some did not. Up to the present time we have but few instances of the finding of known pathogenic bacteria

in water used for drinking purposes. Koch found his spirillum in a water-tank in India, and several observers have reported the finding of the typhoid bacillus in drinking water. Recently Beumer examined the water of four wells in a vicinity where cases of typhoid fever had repeatedly occurred. From one of those wells colonies were obtained by the plate method which proved to have all of the characters of the typhoid bacillus. The distinguished German chemist Brieger has succeeded in obtaining a toxic ptomaine from cultures of the typhoid bacillus, which has the composition $C_7H_{17}NO_2$.

The question of the etiology of croupous pneumonia has received much attention during the past year, and it is now evident that the bacillus of Friedländer, which has been cultivated for some years in the laboratories of Europe under the name of "pneumococcus," is not entitled to this distinctive appellation. On the other hand, evidence is accumulating that a micrococcus which I have described under the name of *M. Pasteuri*, and which is found in normal human saliva, is far more frequently found in the exudate into the alveoli during the acute stage of croupous pneumonia than that of Friedländer. I first experimented with this micrococcus in 1880, and isolated it in pure culture in 1881, but it was not until January, 1885, that I discovered its presence in pneumonic sputum, and made inoculations rabbits with the material.

The record of my first successful experiment, published in the *Transactions of the Medical Society* of New York for October, 1885, was as follows: "January 2, 1885, I inoculated two rabbits subcutaneously with pneumonic sputum, collected with great care by my friend Dr. Zeibig, and brought to me at once from a private patient, a boy, sixteen years of age, in the second day of a bilious remittent fever. Both rabbits were found dead on the morning of January 4th. In both the subcutaneous appearances were identical with those constantly observed by me in rabbits killed by the subcutaneous injection of my own saliva, every vessel of the abdominal cavity and extending from point of injection, enlarged edema, and presence of pus and micrococci as found and described in the saliva (subcutaneous putrid fever)." In the same paper I said:

"It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia, and that the infectious nature of this disease is due to its presence in the fibrinous exudate into the pulmonary alveoli.

"That the blood be considered as distinctly septic [also] by the experiments which I have recorded [with some lower animals]. The constant presence of this micrococcus in the mucoid secretions of healthy persons [and] critical cases [are] favorable to the [supposition] of an attack of pneumonia [and] a secure prophylaxis. The exercise of [a] tendency to [lessen] resisting power of the pulmonary tissue, and thus weakening these structures so that the [action] of the micrococcus is [exerted]. The [occasional] occurrence of the disease in the [same] person [at] different [times] is [explained] by the [fact] that [the] resisting power [is] also, that a reflex vasomotor paralysis, affecting a single lobe of the lung, for example, when induced by exposure to cold, may so reduce the resisting power of the pulmonary tissues as to permit this micrococcus to produce its characteristic effects.

"Again, we may suppose that a person, whose vital resisting power is reduced by any of the causes mentioned, may be attacked by pneumonia from external infection with material containing a pathogenic variety of this micrococcus having a potency, permanent or acquired, greater than that possessed by the same organism in normal buccal secretions."

The extended researches of Fränkel and of Weichselbaum show that this micrococcus is very commonly, if not constantly present in the exudate of croupous pneumonia, and both of these investigators are inclined to attribute to it a specific pathogenic rôle in connection with the malady in question. Fränkel's first paper was published in 1887. In this paper he says:

"Finally, as regards the relative frequency of the two hitherto investigated microbes, in cases of pneumonia no positive statement can yet be made. Nevertheless, I am inclined to regard the lancet-shaped pneumococcus, which is identical with the microbe of sputum-septicæmia, as the more frequent and the actual infectious agent of pneumonia, on the ground that this organism is so much more frequently found in the sputum of pneumonia-patients than in that of healthy individuals. This conclusion is further supported by the consideration that it has not hitherto been possible to isolate directly from the rusty sputum, Friedländer's microbes."

Weichselbaum remarks that he has found this organism in twenty-four cases of pneumonia, eighty of which were of primary and sixteen secondary. On the contrary, he found Friedländer's bacillus in only nine cases; in three of these cases it was associated with the diplococcus above referred to, and in only three instances was it obtained alone in pure cultures.

Weichselbaum arrives at the conclusion that pneumonia may be caused by several different organisms, but that the diplococcus which I have called *M. Pasteuri*, is, in the way which none of the German authors have found willing to accept, is by far the most frequent cause of primary croupous pneumonia.

Whatever may be the final conclusion with reference to the specific etiological rôle of this or other microorganisms in pneumonia, we must recognize the importance of secondary causes which control the endemic and epidemic prevalence of the disease, and these have been well and satisfactorily set forth in a very satisfactory manner by our distinguished member of our Association, Dr. Brieger, of Moabit.

Among the most important investigations of the past year are those of Councilman, of Baltimore, and Osler, of Philadelphia, in reference to the presence of microorganisms in the blood of malarial fever patients. Both of these observers confirm the discovery of Laveran, who, for the first time, as the result of extended researches made in Algeria, that blood drawn from the fingers of such patients, during a febrile paroxysm, contains a parasitic hæmatozoon, which presents itself in different phases of development, and which in a certain proportion of the cases was observed as an actively motile flagellate organism. Osler and Councilman

have found all of the forms described by Laveran, and the last-named observer reports that in recent researches in which blood was obtained directly from the spleen, the flagellate form was almost constantly found. Whether the amœboid "plasmodium" found by Marchiafava and Celli, of Rome, represents an early stage in the development of this organism, or whether it simply represents a change in the red blood-corpuscles, which occurs also in other diseases, as is claimed by Mosso, has not yet been definitely determined. It is somewhat curious that just when we are receiving satisfactory evidence of the presence of the parasite of Laveran in the blood of malarial fever patients, the bacillus of Klebs and Tomassi-Crudelli, which appeared to be dead and buried, has again been introduced to our notice by the distinguished German botanist, Ferdinand Cohn. In his paper published in June last, he gives an account of the researches of a young physician, named Schiavuzzi, who has made researches in the vicinity of Pola, a malarial region in Istria. The method followed was that of Klebs and Tomassi-Crudelli, viz., examination of the air and water in malarial localities, and inoculation experiments in rabbits.

The bacillus was constantly found in the air, and the rabbits inoculated presented symptoms and pathological lesions believed to be identical with those of malarial fever in man. I cannot at the present time go into a critical discussion of the evidence presented, but would refer you to an experimental research made by myself in New Orleans in the summer of 1880, in which I repeated the experiments of Klebs and Tomassi-Crudelli, and arrived at the following general conclusions:

"Among the organisms found upon the surface of swamp-mud, near New Orleans, and in the gutters within the city limits, are some which closely resemble, and perhaps are identical with, the bacillus malariæ of Klebs and Tomassi-Crudelli; but there is no satisfactory evidence that these, or any of the other bacterial organisms found in such situations, when injected beneath the skin of a rabbit, give rise to a malarial fever corresponding with the ordinary paludal fevers to which man is subject."

I see no reason to modify the opinion here expressed, notwithstanding the endorsement given by Cohn to the results announced by Schiavuzzi. These researches relating to organisms in the air and water, and experiments upon rabbits, especially in the hands of an inexperienced investigator, cannot have any great scientific value in the elucidation of an etiological problem. The sources of possible error are too numerous, and the method is in any case inadequate for the complete solution of the problem. It is essential that the infectious agent, especially one so easily demonstrated as this bacillus, be proved to be present in the blood or tissues of malarial fever patients, and in the absence of such proof, experiments upon rabbits and researches in the air of malarial regions can have but little weight. It may well be that in the swampy districts of warm climates, where malarial fevers prevail, one or more species of bacillus will be found in the air or in the water, which are absent from the drier air and running waters of non-malarious uplands, but this is simply an interesting fact in natural history relating to the distribution of organisms of this class, and by itself cannot be accorded any value in a consideration of the important question of the etiology. The method of research pursued by Laveran, by Marchiafava and Celli, by Councilman, and by Osler, is the true one, and none of these gentlemen have encountered the bacillus of Klebs and Tomassi-Crudelli in their extended researches. On the other hand, they are in accord as to the presence in the blood of a peculiar flagellate organism, and of certain spherical and crescentic bodies which are believed to represent different stages in the life-history of this infusorium.

If the time permitted, I would be glad to continue this review of the recent progress made in the interesting field in which I have been for some time an enthusiastic worker, but your patience would be exhausted long before I could reach the end of the story.

The importance attached by the profession to studies of the nature of those referred to is well stated in a recent editorial in the London *Lancet*, relating to the International Hygienic Congress recently assembled at Vienna. The editor says: "The Vienna meeting will serve the double purpose of indicating the necessity of skilled investigation of the causes of disease, and of encouraging statesmen to rely upon work of this character, rather than upon collective opinion.

"The excellent work which is carried on in the continental laboratories has undoubtedly had its effect in teaching the value of exact knowledge, but there was none the less too great a desire at Vienna to record by resolution the opinion of numbers, regardless of their fitness to exercise any proper judgment upon the points at issue."

Before concluding my address, it becomes my sad duty to remind you of the losses which our brotherhood of sanitarians has sustained during the past year, to speak of those whose voice will no more be heard among us, who have joined the great army of the dead. Happily for us they have left a record behind them, of honest endeavor and earnest words spoken in behalf of their fellow men. Their names are not simply recorded in the list of our members, but also in our hearts; and a permanent record of their contributions to sanitary science will be found in the papers to which their names are attached, which are contained in the volumes of our transactions.

And now, Gentlemen of the American Public Health Association, having already exceeded the limits which I had intended to place upon the length of my address, nothing remains but to thank you for the kind patience with which you have listened to me, and for the high honor which you conferred upon me at Toronto, in electing me your President for the present meeting.

ORIGINAL ARTICLES.

A DEATH DURING, AND A DEATH BEFORE, THE ADMINISTRATION OF ETHER.

By D. HAYES AGNEW, M.D.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF PENNSYLVANIA.

On the 3d of August, 1887, I was called to visit by appointment, Mr. R. D., æt. forty-five, at his hotel in Philadelphia, for the purpose of removing two ulcerating hemorrhoids, which had resisted the

ordinary means of treatment for several months, and were causing the patient great discomfort. Dr. White was asked to accompany me and administer the ether. There were no ascertainable reasons why an anæsthetic should not be given, as neither the heart nor kidneys were diseased, and the patient appeared to be in good health. Only one year previous I had divided and stretched the sphincter ani of Mr. D. for fissure, administering the ether myself, and after anæsthesia, entrusting the agent to a friend of the patient, who was present, for the brief time required for the operation. About six ounces were taken at this time.

At the time of the last operation nothing occurred during the early stage of the inhalation, other than what is witnessed every day when ether is exhibited. In the course of fifteen minutes the patient, though somewhat rigid, was placed across the bed. One of the tumors was dragged down, transfixed, and ligated with a double ligature. When about to seize the second, the breathing, which had been strong and free, suddenly ceased. The operation was immediately suspended, and the usual methods for resuscitation instituted. These consisted in examining the throat for the probable presence of some obstructing cause, dragging the tongue forward, the use of artificial respiration, flagellating the surface with the end of a wet towel, ammonia to the nose, partial inversion of the patient, and, finally, the passage of the electro galvanic current through the phrenic nerves. Notwithstanding these measures were persisted in for at least three-quarters of an hour, during twenty-five minutes of which time the pulsations of the heart could be recognized, not a single effort of natural respiration occurred. The man was dead.

The post-mortem made by Dr. Formad, revealed complete collapse of the lungs, marked traces of an old meningitis, attributed to a former sunstroke, and what satisfactorily explained the sudden termination of life, the rupture of a calcified vessel in the floor of the fourth ventricle, the recognized physiological centre of respiration: all the vessels comprising the circle of Willis were in a similar state of atheromatous degeneration. It was evident, therefore, that the increased vascular tension of these cerebral vessels, caused by the ether, determined the lesion, a result which might have followed any unusual excitement, mental or physical. The heart and kidneys were healthy.

The question naturally occurs, Could this sad disaster have been prevented? Certainly, in view of all the circumstances, it could not. *First.* The ether was that known as Squibb's. The can contained eight ounces; two ounces remained in the vessel; two ounces, it is fair to suppose, had been retained in the folds of the towel, leaving four ounces, or, at most, less than five ounces which had been inhaled. *Second.* There was a sufficient admixture of atmospheric air with the respired vapor, as the anæsthetic was administered from an ordinary towel folded into a cone and with an opening at the apex. *Third.* The position of the administrator, Dr. White, that of reclining alongside of the patient, with the face of the latter in full view, would have enabled him to detect at once any signs of approaching danger, which, from his long experience in giving anæsthetics, would have been quickly recognized; and, *last*, the impossibility of being able to ascertain during life, the state of the bloodvessels of the brain disclosed by the autopsy, and rendered very improbable in a man of forty-five years of age.

After forty years of surgical work, often, too, of the gravest character, and sometimes requiring prolonged anæsthesia, without an accident in a single instance, I had come to believe that the exhibition of ether, unless recklessly administered, was entirely free from danger. Several deaths, I am aware, have been reported, from time to time from its use, even in the hands of the most careful operators, but I never could divest my mind of the idea that in these cases there was some undetected element involved more influential in the issue than the ether, as in the present instance.

The following case, which came directly under my own observation only a few weeks before the death of Mr. D., is in point.

I was called to one of our suburban towns to see a case of strangulated hernia. The patient was a female about seventy years of age. The intestine had been incarcerated for three days. Her pulse was quite good, and there were no signs of collapse. I noticed the pupils were much contracted, no doubt from the opium which had been administered. I directed her medical attendant to place the patient properly in bed, and prepare a cone for giving the anæsthetic, while I made my preparation for the operation. This was done. In a few minutes I was ready to proceed, and then told the doctor to give the ether. While reaching for the bottle, and before removing the cork, the patient gave a sudden convulsive movement, at the same time ejecting a large amount of stercoraceous matter from the stomach, and expired in a moment. Had the etherization been commenced, or the operation begun, before the death of the woman, the fatal result would have been charged to either the anæsthetic or to the knife.

THE ORIGIN OF SOME DISEASES.[1]

BY EZRA M. HUNT, M.D.
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THE class of diseases variously known as contagious, transmissible, or communicable has ever attracted the most earnest consideration of medical men and of all sanitarians. By the quickness and often obscurity of their invasion, by the malignant type they too often exhibit, and by the large areas over which they extend, they not only make large demands upon the skill of the profession, but arrest the attention of all mankind.

The study of epidemiology has enlarged their numbers and now shows us that many diseases once regarded as constitutional or septic are in reality specific and pathogenic or mostly parasitic.

[1] Read before the American Public Health Association, at Memphis, November 8, 1887.

The prevention and limitation of this class of maladies must ever therefore largely occupy the attention of all of those who study the causes, the courses, and the results of disease.

The study of their etiology is always a *fundamental* inquiry. While to a degree it is possible to treat a disease skilfully without knowing its causes, it is always more satisfactory and generally more skilful to know something of the causes.

But what do we mean by etiology or causes, surely not always, not generally, the beginning or efficient or final cause? Prof. Semmola, of Naples, at the recent meeting of the Medical Congress at Washington may have startled some by these words, "Medicine, like all other sciences, never demands why, well knowing that the *first* causes of things are inaccessible, and that to every scientist it should *suffice* to know in which physical and chemical conditions this or that phenomenon manifests itself, so that he can modify and govern it at his will." This is true. The best that we can generally hope is to find the *conditions*, physical, chemical, or biological, in which phenomena manifest themselves. The word *cause* is often in the same sentence used in two or three different senses. In our etiology we must remember that by cause we mean mostly the "conditions under which phenomena manifest themselves." Also that these conditions (thus called causes) mean the modifying influences present in the host or person, and the modifying influences of surroundings much oftener than they mean anything in the specific entity which we are so often calling the germ, and then calling it the cause.

While reaching back toward the beginning, even though we seldom reach the starting-point, we do come to see how it is true of every disease as of every living thing, that it must have had a beginning. It is not a mere platitude to say that there was a day when the first case of smallpox occurred.

Nor does it necessarily belong to the sphere either of creation or spontaneous generation. A case of some new disease may put in an appearance, as did cholera on the Ganges, or a case of a known and existing disease may happen that is not derivĕd from another precisely like it, but occurs because analogous conditions to those which gave rise to the first case of the kind have again occurred, and produced a pronounced deviation.

So it is possible that at the same time, as to some one disease, we may have cases of a communicable disease which have arisen from previous cases, and other cases that have resulted from a combination of influences or conditions such as gave rise to the first case. There are at least two reasons why the old dictum of *omne vivum ab ovo* cannot now be applied with the precision or with the finality with which it used to be quoted.

I. There is such a thing as *evolution*, which, while recognizing an original type, also recognizes departures from the normal which may have come to be so representative and paramount, as to constitute *newness* in all essential particulars. Since we have come to recognize that many diseases are but developments and cultures of microphytic or microbic life, we very appropriately turn to the facts of botany, not only for illustration, but for verification of our theories. And what a change has taken place in *its facts* since the days of Linnæus? We no longer cling to the divisions of orders, genera, and species so closely laid down by him. We recognize two forces—nature or heredity, and environment. A plant inherits a likeness which it *tends* to retain, but it is often so modified by environment, as greatly to change, and so sometimes as even to *lose* its identity. Environment comes to predominate over heredity. The horticulturist often takes a plant which he has found to be subject to variations, and fixes and perfects it in some one of them by cultivation.

Prof. Huxley has recently contributed to the Linnæan Society a paper on the classification of gentians, in which he claims that gentians are all specialized—that is, become gentians from some other form. *Permanency* of type has so many exceptions, that *variations* of type and the power to give fixity to some of these variations by means of cultivation or environment, must be accepted as a doctrine and a fact. Species and genera have variations, sports, modifications not dreamed of by the earlier botanists. Some of these departures are so marked and so predominant as to obscure the relationship and so far *ignore* it as to have individuality of their own. If, as we know, cultivation or surroundings can change a poisonous plant into a mild one, or can wholly modify it, it is not remarkable that a microphytic disease should lose its apparent identity, and at length in a new culture-medium or under special conditions become specialized. It is a law abundantly illustrated in the vegetable world, that environment causes variations, and that some of these variations tend to fixity of type, while others do not. All the wonderful facts of evolution show full well that we may in this way have what in respect of *symptoms and treatment* is a new disease.

Yet it is not a *de novo* origin in an absolute sense, or, if practically *de novo*, it is not *de nihilo*.

It is, that a series of changes has been evolved by environment, by conditions in persons or in surroundings, until the result of some of these changes becomes self-assertive and prevails over its heredity so as to secure for a longer or shorter period a fixity of its own.

This fixity may be a new disease.

II. The history of hybrids, the so-called accidents of their occurrence; and the fertility of hybrids is such that we are forced to look upon them as new forms of life—as becoming established into an autonomy or individuality of their own.

The horticulturist in some of the wonderful productions of new plants in the last score of years has come to be familiar with hybridisms that wholly obscure origin and that come to have a fixity of their own as much as some new diseases with which we have to deal, or as much as cases of disease which we cannot trace to a contagious source.

All this has been greatly emphasized by what we have come to know as the fertility of hybrids.

Not over thirty years ago the general view of botanists was that hybrids were sterile.

But so numerous are the exceptions and so abundant have been the results of new cultivations that this view is fully disproven. Says a recent botanical authority, "Among plants there are many instances of hybrids between species being perfectly fertile, and continuing so for an indefinite period. Experiments during the last twenty-five years have increased the number of such fertile crosses manifold. . . . Fertility of hybrid plants is the rule and sterility the exception. So far as plants are concerned, there is not the slightest ground for considering sterility as a distinctive bar, separating species. These hybrids come to have a specificity of their own so different from the parentage as to be unrecognizable, and so specialized as to be permanent. As another expresses it, "The hybrid becomes an individual not responsible to its species."

Nor is this confined to plants with spores. Some of our most skilful horticulturists are now producing varieties of *ferns* by hybridism, and every now and then some so-called change growth or sport shows wide departures.

The bearing of all this on the parasitic forms of disease is not far to seek. It, as now seems so nearly proven, so much of disease has to do with elementary and minute forms of vegetative life, it is easy to see how the facts of evolution and hybridism have a bearing upon the appearance and propagation of disease. The light of the botanical world and its marvellous revelations as to the actualities and possibilities of the origination of new forms distinct from the parentage, penetrates the hidden sphere of disease-origin, and shows how some diseases cease, how others arise, how some lapse back to their heredity, while others are made permanent or specialized by their environment and how others still are hybridized into specific forms and acquire a fertility and fixity of their own. This range of deviation is so wide as to account for very many of the anomalies of disease and for the organization, cessation, or modification of form.

In reply to my inquiry on this particular point Mr. Mehan, the distinguished botanist of Germantown, Penna., writes me: "All hybrids, that we know by actual experiment *are* hybrids, are fertile as far as I know, and reproduce their originals just the same as if they were 'original' species. I think almost every botanist of note believes in abundant, fertile hybrids in nature. Coming down nearer to your own line of thought, I believe it is conceded that all lichens are hybrids between fungi and algæ. It is tenable that new forms of disease are continually coming into existence, which can only arise from new forms of disease-producing plants (microscopic fungi) being evolved from older species; but I do not know whether there is an opinion that these new forms are the result of hybridization or of that natural law of change which seems to be a constituent part of existence—in vegetation at least."

In a paper read by Dr. M. W. Taylor, before the Epidemiological Society of London, April 13, 1887, he notes the fact that many of the fungoid varieties were but "conversions of elementary states of penicillium and oidium. It is also maintained by Zopf (the botanist), that there may be a *pleomorphism* amid pathogenic microörganisms, and that there are stages of intermediate forms resulting from the nature of the nutrient media." (See *Lancet*, May 7, 1887, pp. 933, 934.)

The view is, we believe, gaining ground, that harmless microphytes may become pathogenic, and that the different forms of microörganisms present have relation to each other, and that the culture-medium in disease, viz., the person and his surroundings, determines the character of the microörganisms full as much as the microörganisms determine the character of the disease.

If the views as to the microphytic origin of most of the communicable diseases are correct, the study of the laws of this evolution and hybridism is vital. We believe it is in this direction that we are to account for the origin of new diseases, or for such variations in type as obscure or destroy identity. If we can, through this study, arrive at the evidence that in this sense many diseases begin, we have a new department of study, in that we are called upon to define with accuracy how and why this origin takes place, in order that we may thwart or circumvent the conditions.

If it is the result of *evolution* through a long series of changes, it behooves us to study the normal, and to watch and record all the gradations by which the unfriendly result is attained, so that, at some stage, we may intercept the progressive and threatening changes that are occurring, or ascertain what condition of the person, or what condition of surroundings constitutes the influence which brings about the change or provides the fertilizing medium for the disease and causes it to break forth. If it is the result of a *hybridism* which occurs spontaneously or rapidly, we need to study precisely what forms of vegetative life thus incline to coalesce, under what condition the union occurs, and how their conjunction, development, and fertility are to be interrupted.

If special conditions of some parts—as the throat, for instance—or certain conditions of the secretions, furnish a special soil or culture-fluid for the propagation of low forms of vegetative life, this is to be studied with exactness.

In each of these lines the same methods of technical study and close record and analysis of facts by competent observers, which has prevailed in the study of minute plant life by botanists, and which has obtained in many other sciences, will, in this comparatively new field of biological and botanical research, accomplish equally valuable results. In it we are attempting to find out how much, and under what circumstances microörganisms imperil human life.

The practical value of such an inquiry is apparent, for sooner than is the case with most of the studies of nature, the results will be applicable in the prevention and treatment of disease. It will be a great gain if we can come to know that, either under the laws of evolution, or as the result of admixture or hybridism, symptoms and pathological effects become specialized so as to constitute a new disease which maintains its type.

As examples of how proximity of different diseases

may modify symptoms, we have many suggestive facts in the history of disease. Yellow fever is believed by many to be a mongrel, born on the high seas by admixture of the jungle fever of Africa with the typhus of the pent-up hold of the filthy vessel. It is not certain that typhoid fever was not once nearer to typhus, until it came to be called abdominal typhus, and then to have modifications because surroundings and the acquired power of self-propagation gave it an autonomy of its own.

It is not even now certain that there are not grades of cesspool and other adynamic fevers that will some day declare another well marked departure from what we now call typhoid, and come to have an individuality of their own.

It is not certain that when Sydenham treated scarlet fever and measles as one disease that their lines of difference were as well marked as now.

Diphtheria so often seems to have a localized origin, and common forms of sore throat are so often seen to pass away from their general into a special type, that it will not be strange if we can come to the law of departure. (See views expressed in the *Sanitary Record* of August 15, 1887, p. 88, and the contribution of Dr. Wordin, in the *Connecticut State Health Report for 1887*, that diphtheria results from the special virulence of a micrococcus which is not specific, but present in forms of foul or septic sore throat).

While typho-malarial fever has no pathognomonic lesion to distinguish it from the ordinary typhoid, yet we do know it has symptoms to distinguish it.

The advances of biological investigation have put us in regions of new possibilities, that do not involve spontaneous generation, but yet do render probable what is equivalent to the *de novo* origin of cases of disease which afterward are chiefly communicated by the first and succeeding cases.

Having settled that such origins do take place, we shall then pry into the secret of the laws of combinations and the conditions which favor the evil evolution or the facts of hybridism, and seek to combat these by starting similar processes in opposite directions, or by sterilization, neutralization, disinfection, and all the details of radical sanitation.

Such a view of the occurrence of old or new diseases and of the reasons for fixity in some and changing forms and types in others leads to several practical results.

1. The study of parasites, or germs, as they are called, is only one of the methods of informing ourselves as to the phenomena of disease, and in itself is not likely to be the key to rational and successful treatment.

2. Our attention should be directed far more than now, to the study of conditions and circumstances under which new forms appear; to the influence of persons and surroundings, instead of to the mere finding of a specific form. The latter would, of course, be most valuable as one of the facts in the chain of evidence, but we should not, as now, seek so much to look to it as the cause of disease as to inquire what conditions have *caused* this or that particular microphyte to be present.

3. We should be able to account for the occasional occurrence of a disease independent of any previous case, and for changing types of disease and new diseases, and would come to treat diseases less by their names and more in view of their type and the effect of surroundings upon them.

4. The tendency of all this is to magnify the importance of close observation and to lead us to feel that success in warding off disease and in treating it when it appears, depends mostly upon close observation and that experience which is derived from actual practice.

If we are looking to the biological laboratory for the natural history of disease, or to the chemical laboratory for the application of remedies, we shall surely fail. It is not so much that we need to find the specific germ, or the specific methods. The world is always looking after specifics. But the science and art of sanitation has far more to expect from a study of the conditions of persons and surroundings under which diseases, or types, and modifications of disease manifest themselves, as also from a study of the prevention or obliteration of such conditions, than it has to expect from the finding of microphytes as the source of disease, and seeking to cure disease by expelling microörganisms or attenuating them.

Our only design in this paper is to awaken inquiry as to modes of accounting for the localized origin of disease, without any antecedent case, on the proposition that the laws of evolution, environment, hybridism, or modification by culture, give rise to diseases so different from their prototypes as to have individuality and permanency of their own.

Because such inquiry is relevant to prevention, there is good reason to believe that by ascertaining the laws of these transformations and modifications of type and of the origination of special varieties, we shall ere long find new means for the prevention or limitation of many diseases.

THE PHYSIOLOGICAL ACTION OF THE OIL OF TURPENTINE.

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Notwithstanding the fact that the oil of turpentine has been used empirically for many years with great success in certain morbid conditions, but little effort has been made to study its relations with the animal organism other than by the bedside. Kobert[1] and Hoppe[2] have made studies of its action to a limited extent, as has also Azary, an Hungarian investigator; otherwise nothing has been done worthy of remark.

When from one to two drops of the oil of turpentine, having first been thoroughly stirred up with about fifteen cubic centimetres (four drachms) of water, is injected into the jugular vein of a dog weighing thirty-four pounds, there is produced immediately an increase in the number of the cardiac movements which lasts for an indefinite period. There is, how-

[1] Centralblatt f. med. Wissenschaften, 1887, p. 129.
[2] Journal für Pharmacodynamik, Bd. I, p. 105.

ever, no rise whatever in the arterial pressure, the vasomotor system being absolutely unaffected.

In a larger dose, amounting to five or ten drops, he found, the same increase in the cardiac pulsations occurs, but is followed in the course of from two to three minutes by a very marked slowing of the pulse, which is decreased in number considerably below the normal. Along with this primary increase in rate, there is a slight rise of arterial pressure which does not exceed ten millimetres of mercury, and which returns to the normal on the appearance of the slowing of rate mentioned. When a still larger dose (30 m) is administered in the same manner, the primary increase in rate lasts but for a moment, and is immediately supplanted by a very marked decrease in rate resembling that already mentioned. The arterial pressure still remains virtually unaffected. Doses of as much as two drachms of the pure oil produced a very marked fall of arterial pressure with great cardiac depression, and in one case death, in which respiration continued twenty seconds after the heart had ceased to beat. From the character of the pulse waves it was evident that the fall of pressure was due to cardiac failure rather than to any vasomotor action, and this was still further proved by the fact that asphyxia produced a momentary rise of pressure, a considerable rise being impossible in the depressed condition of the heart.

DOG, WEIGHT 31 LBS.

Table of experiments showing slight effect of two drops of turpentine on arterial pressure

Time	Dose	Pressure	Pulse	Remarks
		114–118		
		112–116		
		110–114		
		108–112		
		110–114		
		112–116		
		110–114		
		108–112		
		110–114		
		112–116		

In order to determine whether the cause of the primary quickening of the heart beats was due to palsy or depression of the vagi, these nerves were galvanized, and were found capable of reducing cardiac movements as completely as in the normal animal, and this proof of their integrity is still further supported by the fact that later on the drug was shown to be stimulant to these nerves. In short, there is evidence that this increase in pulse rate must be due to a direct action on the heart or to a reflex stimulation of the accelerator nerves. That the action is on the heart itself, is pointed to by the fact that the drug applied directly to the heart of the frog produced an increase in rate, and this was proved by cutting the spinal cord in the dog, thereby making sure of the accelerator nerves. Under these circumstances, the increase in rate after small doses still continued.

That the slowing which comes after the use of from five to thirty drops is due to inhibitory stimulation of centric origin is proved by the fact that section of the pneumogastric nerves immediately causes the typical rapid pulse, produced ordinarily by such a section. That the slowing is not due to cardiac depression is proved by the strength of the individual pulse waves and the constancy of the arterial pressure, and by the typical curves, after large doses, of vagal stimulation. These experiments were repeated so often and with such varying doses, but with an equally great constancy of the same result, that there can be no doubt of their truth.

The results are very much opposed to those obtained by Kobert and Hoppe, who found that the drug very powerfully affected the vasomotor system, at first causing a rise of pressure and later a fall. They found, however, as did the writer, that the heart is stopped in diastole, or, in other words, paralyzed. In their experiments, however, the vagi seemed to be unaffected.

I do not know in what lies this difference in results, unless it be due to some difference in the character of the oil used. The oil used in my own experiments was obtained from one of the most reliable druggists in Philadelphia, who was informed that the best was be used, and also of the purpose for which it was to be used. That the absence of effect on the vasomotor system was constant, was proved not only by the use of doses of various size to various dogs, but by the administration of ascending doses of from two to thirty drops of the oil to individual dogs. In all cases the results were identical. These same results were reached in curarized and uncurarized animals, so respiration could have had no influence.

On the nervous system of the frog, the drug exerts a very decided influence when used in large amount. If as much as five drops be injected into the posterior lymph-sac of a medium sized frog, reflex movements are rapidly decreased, so that they occur only on decided stimulation. When they do occur, they are, however, very strong. Mechanical stimuli first fail to produce contractions, after this even burning fails to produce any movements, or, if any occur, they are very weak. That this failure of reflex is due to sensory involvement and not to any influence on the motor portion of the nervous system, is proved by the fact that powerful contractions take place in the limbs if the batrachian so desires, although the foot may be destroyed without calling forth any movement. Later, the frog lies on its back when so placed, but is still capable of originating powerful muscular contractions.

Finally respiration becomes less and less, motion fails as well as sensation, and the animal dies.

The question as to whether the failure of sensation is due to the action on the nerve trunk or spinal cord was decided by tying a ligature around an entire limb, except the nerve trunk, and injecting the poison into the limb below the ligature, the spinal cord being therefore protected. Under these circumstances there was a decided lessening of reflexes even to severe stimuli, such as burning. At the same time it was proved that the sensory part of the spinal cord does not escape, for, if the artery in

a limb be tied and the poison given into the body, reflexes are lost even more completely. When much smaller doses are used ($\frac{1}{10} = \frac{1}{4}$ drop) reflexes are at first increased, then slightly diminished, the increase being due to a stimulant action on the spinal centres.

Summary.—1. The oil of turpentine in small doses, resembling those ordinarily given in practical medicine, produces an increase in the number of the cardiac beats due to a direct stimulant action on the heart.

2. In larger doses it produces distinct slowing of the pulse, due to a stimulation of the pneumogastric or inhibitory centre.

3. That its influence on the vasomotor system, if at all, is very slight, either with large or small doses.

4. That poisonous doses (5 c.c. to 10 c.c.) (ℳ. 80 to 160) produce death by cardiac failure when injected directly into the jugular vein.

5. That the drug in small doses increases reflex action somewhat, but in large doses decreases it, the increase being due to a stimulation of the spinal cord, and the decrease due to depression of the sensory side of the cord and afferent nerves.

MEDICAL PROGRESS.

Conduct of the Third Stage of Labor at the Rotunda Hospital, Dublin.—Macan, in his address before the Section for Obstetrics of the British Medical Association, at its last meeting, described the method employed at the Rotunda as follows:

As soon as the child's head is born the left hand is placed on the fundus, the ulnar edge being directed toward the vertebral column with the palm of the hand looking directly in the axis of the uterus. The child's eyes are then carefully wiped, and a finger is passed into the vagina to see if the cord be round the child's neck. If uterine action does not soon expel the child, or if it should make any effort at inspiration, showing a want of aëration of its blood, then pressure is made on the fundus, which is generally sufficient to cause the body of the child to be expelled. If it does not do so, then gentle pressure is exerted on the child's head so as to push it backward against the perineum till the anterior shoulder descends with a well-marked jerk past the pubes, and then the delivery is readily terminated by pressure over the fundus. As the child leaves the uterus the left hand follows down the fundus, and causes any liquor amnii that is still in the uterus to be expelled. The position of the hand must now be the same as before the child was born, that is to say, the ulnar edge must be directed backward against the woman's spine, and the fundus should be pressed, if anything, forward against the pubes. The whole hand is now gently rotated, so that the tips of the fingers irritate the posterior surface and sides of the uterus, and more especially the points of insertion of the round ligaments. We can then follow and watch over the alternate contractions and relaxations of the uterus, and judge whether it is becoming unduly distended with blood or not. In the meantime the nurse steadily ties the cord as soon as all pulsations in it have ceased, and then the uterus is never for a moment out of the direct observation of the medical man in charge of the case. Should the child be bodily asphyxiated—that is, in a state of white asphyxia—the nurse should tie and cut the cord at once, and then take charge of the fundus of the uterus, while the medical man takes charge of the infant. When there is any considerable tendency to *post-partum* hemorrhage it becomes a very nice question whether the medical man should direct his efforts to resuscitating the infant or to stopping the *post-partum* hemorrhage. In any case of doubt the mother's care demands our first attention. If the discharge of blood remains moderate, and there is no accumulation taking place into the uterus, we use gentle friction at intervals for fifteen minutes, and then make firm pressure on the fundus in the axis of the brim during the acme of a contraction. This is nearly always sufficient to expel the placenta both from the uterus and from the vagina. The hand still, however, commands the fundus, and friction is again applied when we feel the uterine contraction beginning to relax. Should this interval of relaxation pass without any hemorrhage, then we wait for the next contraction, and apply the binder during its continuance. After the binder is applied the woman again turns on her back, and the hand is rubbed backward and forward over the fundus till it is found to be in such a state of permanent retraction as to exclude all danger of *post-partum* hemorrhage.—*British Medical Journal*, No. 1390, 1887.

Imaginary Tumors of the Tongue.—At a recent meeting of the Academy of Medicine of Paris, Hardy corroborated the observations of Verneuil, Fournier, Labbé, Laborde, and others, who had reported cases of imaginary tumor of the tongue in neurotic patients. Hardy had also recognized the disorder in those suffering from the late stages of syphilis, who had taken mercury for some time. In such patients there is generally a redness and slight swelling persisting for a long time after the acute stage has passed. The sensory nerves of these parts become altered in structure, and after all gross lesions have disappeared, sensations of pain and burning cause the patients to apprehend cancer. Inspection generally reveals no alteration beyond possibly a few mucous patches. The most useful treatment has been the long-continued administration of alkalies, with the local application of glycerine and carbolic acid. In syphilitic patients, whose sensory lesions generally diminish in acuteness as the disease progresses, these sensations of cancer grow less acute as time goes on, generally disappearing.—*L'Abeille Médicale*, October 10, 1887.

Continuous Irrigation, with Hot Water, in Sepsis after Laparotomy.—Dr. Haggard, of Nashville, reports a case in which, after partial removal of a fibroid tumor of the uterus, necrosis of the remainder and sepsis occurred, treated by continuous irrigation for a week with water at a temperature of 105°, and the free use of tonics. Recovery and cessation of all previous symptoms ensued. He adds the report of a case of laparotomy for cyst of the broad ligament, in which sepsis occurred, owing to the presence of necrotic tissue, whose removal was impossible in the exhausted condition of the patient.

Constant irrigation with hot water for twelve days

resulted in maintaining the elimination of noxious material, and the patient recovered. In both cases the usual methods of drainage failed.—*Southern Practitioner*, November, 1887.

A CASE OF CHARCOT'S DISEASE.—DR. PARK reports in *The Medical Record* for November, 1887, the case of a boy, aged forty-seven, who has been bedridden for many years, presenting the peculiar deformities of Charcot's disease in a most extraordinary degree. Careful examination discriminates the case from *myositis ossificans*, and the peculiarly well-marked bony lesions are such as to render the case extremely interesting.

ANTIPYRIN IN THE TREATMENT OF DISEASES OF WOMEN.—MUNDÉ has found antipyrin useful in dysmenorrhœa, especially when attended by neuralgia, for which he gave the drug in a prescription containing caffeine in a course of menstrum, of which, when the pain was moderately severe, he gave from 3 teaspoonfuls to 3 tablespoonfuls daily. In cases of ante- or post-menstrual crisis the dosage should be largely increased; and if needed the following may be given by rectal injection:

Infusion of kousso	ʒ ½.
Decoction of poppies	ʒ ½.
Thick yolk of egg.	
Antipyrin	grs. 15 to 45.

To be made into an emulsion, and given warm.

Prompt and positive benefit has followed the use of this combination.

In dysmenorrhœa from obstruction to the flow, the following has proved efficient:

Aquæ chloroformi	ʒ 25.
Syr. digitalis	ʒ ss.
Liq. ether	ʒ 3ss.
Antipyrin	gr. 75.

Of which a teaspoonful or dessertspoonful may be given hourly.

In some cases ergotine or hamamelis may be combined with antipyrin, as follows:

Aquæ tiliæ	ʒ 25.
Ergotin.	gr. 15.
Syrupi digitalis	ʒ 5.
Antipyrin	gr. 75.

Also

Aquæ tiliæ	ʒ 25.
Fl. ext. hamamelis virg.	♏ 30.
Syrupi digitalis	ʒ 5.
Antipyrin	gr. 75.

Linden-flower water and syrup of digitalis are not officinal in America, and are convenient menstrua, and the usual preparations of this should be employed. The dosage is that usually employed with the ingredients.

Antipyrin may be given by hypodermatic injection in

Recently boiled water	ʒ 2.
Antipyrin	gr. 30.

of which 5 drops represent 3 grains of antipyrin; from 3 to 4 or 5 injections are needed to secure the effect of the drug.

To render these injections as painless as possible cocaine may be added:

Recently boiled water	ʒ 2.
Cocaine hydrochlorate	gr. 1½.
Antipyrin	gr. 28½.

which may be injected deeply in doses of 20 drops.—*Gazette de Gynécologie*, October 15, 1887.

THE ANTISEPTIC TREATMENT OF PURULENT OTORRHŒA.—Quite remarkable results have lately been obtained by the strictly antiseptic treatment of purulent otorrhœa suggested by Dr. W. Chrystie. Specula have all been kept in a 1 to 20 solution of carbolic acid, after having been carefully washed in hot water, and cotton-carriers are in each instance heated to a red heat before being used. The external canal and fundus of the affected ear are first carefully dried out with ordinary absorbent or borated cotton sterilized holders, and the fundus is then mopped absolutely clean with 1 to 40 carbolized solution cotton tufts. This in turn gently dried out, and a powder consisting of iodoform 1 part, boric acid 6 parts, is then insufflated. By this method the duration of treatment has been shortened to two or three applications in many cases, and an average of about eight treatments is sufficient to cure most cases, even when of some years' duration. Thorough treatment of the always diseased naso-pharynx is carried out with great care in all cases of purulent otitis. —*Polyclinic*.

ICTERUS NEONATORUM.—SILBERMANN is quoted by the *Centralblatt für Kinderheilkunde*, No. 17, 1887, in an extended article, in which he concludes that:

1. Icterus of the newborn is a hepatogenic, absorption icterus.

2. The engorgement with bile occurs in the biliary capillaries and interlobular bile-ducts, which are compressed by the congestion in the portal vein and blood capillaries.

3. This engorgement with blood is occasioned by an alteration in the hepatic circulation, occurring shortly after birth, which is a part of a general change in the blood plasma.

4. This blood change is a *fermentæmia* (development of blood ferment).

5. Icterus is more pronounced the weaker the child.

6. The decomposition of a large number of red blood-corpuscles furnishes abundant material for the formation of biliary coloring matters, which, under the working of the ferment mentioned, continue to decompose for a long time in the hepatic vessels.

POISONING BY SULPHUR POMADE.—EICHBAUM, of Leipzig, reports in the *Berliner klinische Wochenschrift* of October 17, 1887, the case of a man, aged thirty-seven, well developed, and previously healthy, who complained of headaches, giddiness, and attacks of partial syncope. Examination revealed the face pale, the forehead covered with cold perspiration, the pupils dilated and not reacting, the movements of the eyes free, the tongue protruded straight, tremulous, and coated. The heart sounds were a little dull, but no murmurs were present. The other viscera gave no signs of disease. Pulse 124, very small; respiration 16; temperature subnormal. There was some rigidity of

the muscles on the right side of the neck. The patient complained especially of occipital headache. There were no history or signs of syphilis or other well-marked symptoms.

By careful investigation and exclusion, a diagnosis of chronic sulphur poisoning from the use of pomade was made. This pomade consisted of—

Vaseline	100 parts.
Wax	5 "
Sulphur	10 "
Oil of roses	a few drops.

which the patient had used for some time to cure dandruff of the scalp, applying it every second day. The preparation of sulphur used was raw powdered sulphur, the oxidation of which, and its mingling with the perspiration, had formed sulphurous acid, whose absorption caused the poisoning. The cessation of the use of the pomade, the employment of hot baths, and exercise in the open air, speedily restored the patient to health. Eichbaum estimated that three and a half ounces of sulphur had been used by the patient.

Excavating Myelitis.—Hydro-myelia, syringo-myelia, and peri-ependymal myelitis are synonyms of the excavating myelitis on which MM. Jeffroy and Orchard recently read a paper before the Academy of Sciences, Paris (*La France Médicale*, Oct. 11th, No. 119). In two cases which they examined they found evidence of a slow inflammation, and they consequently reject the view that the cavities result from enlargement of the central canal from cystic degeneration of a hemorrhagic or gliomatous focus. These authors believe that the distribution of the vessels to the centre of the cord explains the anatomical disposition of the cavities. According to them, the course of events is first a myelitis affecting a special site in the neighborhood of the ependyma, and this inflammation causes an obstruction of the vessels supplying the gray matter around the ependyma, and consequently there results a softening which proceeds to excavation. The formation of the limiting wall to the cavity follows, or is posterior to these alterations, and its pathogeny is therefore the same as that of the wall of ancient foci of cerebral hemorrhage or softening. This interpretation differs from that of Grimm, who finds in the constitution of this vascular false budding membrane the characters of a tumor and the origin of the whole process.—*Lancet*, October 29, 1887.

The Engagement, in the Pelvis, of the Uterus during the Last Months of Pregnancy.—Stapfer concludes, from his clinical study of this subject, that this phenomenon is the result of a translation or transference of the entire uterus, and an elongation of the lower segment. It may proceed rapidly or slowly, definitely or temporarily. The degree of engagement may vary daily, particularly in the last weeks of pregnancy. The variations in this condition may be considerable, the fœtal head may remain as low as the perineum, or ascend to the superior strait. This uterine engagement is caused by the contractions and force exercised by the ligaments supporting the uterus, and by pressure; it is maintained by the tonicity of the ligaments and of the abdominal walls. It is favored by the empty condition of the adjacent viscera, by the absolute or relative volume of the fœtus, by the presentation, and by the elasticity of the inferior uterine segment, and of the membranes. The ascent of the fœtus to the superior strait renders changes in presentation possible, but rare. Any presentation, no matter how deeply situated, may be changed, if the forces producing it vary.—*Archives de Tocologie*, August 15, 1887.

The Treatment of the Third Stage of Labor.—Freund, of Strassburg, in the *Deutsche medicinische Wochenschrift* of October 27, 1887, gives his conclusions regarding this subject as follows: In normal cases a judicious combination of the expectant and active method in treating the placenta and membranes is best. In removing the placenta the accoucheur should wait until the first signs of spontaneous expulsion appear. In cases where the placenta must be removed at once Credé's method of expulsion is the best. Freund has observed, in normal cases, that the uterus rises toward the umbilicus when it expels the child. He imitates, with one or both hands, this action in securing the expulsion of the placenta by gently pushing the uterus upward, and at the same time compressing it.

Formulæ for the Hippurates of Calcium and Iron.—Poulet, in the *Revue Générale de Clinique et de Therapeutique* of October 20, 1887, gives the following formula:

R.—Acid. hippuric.	℥ 25.
Calcii hydrat., q. s. for an alkaline reaction.	
Aquæ bullient.	2 quarts.
Sacchar.	5¼ pounds.
Tinct. citron.	℥ 3¾.

The acid should be dissolved with the calcium hydrate in water heated to 176° F. until neutralization occurs; the other ingredients should then be added.

Syrup of hippurate of lithium should be prepared after the following:

R.—Lithii carbonat.	℥ 2.
Acid. hippuric.	℥ 8¾.
Aquæ	1 quart.
Sacchar.	℥ 37½.

This may be prepared as directed for the hippurate of lime. These syrups should be given pure, or mixed with water, before meals. The doses are two or three teaspoonsful or tablespoonsful daily for adults, and for children proportionate quantities.

Hippurate of iron may be made into pills by combining

R.—Ferri sulphat.	℥ 5.
Potass. carbonat.	℥ 7½.
Acid. hippuric.	℥ 10½.

The sulphate of iron should be first dissolved in boiling water and the solution filtered. The hippuric acid should be neutralized by the potassium carbonate and the warm solution filtered. The two solutions should be mixed, allowed to settle, and the fluid decanted. To the hippurate of iron formed ℥ 3¾ of powdered gum arabic and as much honey should be added and the whole evaporated to a suitable consistency. Pills con-

taining 5 grains each should be made, of which one should be taken before each meal. This preparation is well borne by delicate stomachs. The suppurates may be given when a mild alterative is desired, to be used for a considerable time.

POISONING BY FISH.—A Spanish naval surgeon, Señor Don Antonio Jurado Calero writing in a recent number of the *Boletin de Medicina Naval*, describes the serious effects observed on board his ship, the gunboat *Magallanes*, from eating fish caught in the Bay of Buena Esperanza on the south coast of Cuba. No less than twenty-seven of the officers and crew were affected, most of them with gastro-intestinal disturbance of a more or less severe nature, the others with nervous symptoms. Those of the first group presented nausea, persistent vomiting, and diarrhœa, followed by coldness of the extremities, small and contracted pulse, and in some cases rigors; afterward a febrile condition supervened. The men were nearly all able to return to duty within two days. They complained, however, for some time afterward of irritation of the skin. In the more severe cases there were dilatation of the pupils, marked diminution of sensibility, complete anuria from spasmodic closure of the sphincter of the bladder, and in some cases convulsive movements of the muscles. Those whose symptoms were purely nervous were not attacked till some time later than those forming the first group, and they suffered much less severely, complaining chiefly of cutaneous irritation and headache, also of sleeplessness, which last continued more or less for three or four weeks. In both forms of the affection the termination was accompanied by a cutaneous eruption like urticaria, or in some cases by the appearance of a number of pustules on the skin. This, the author thinks, indicates that the proper treatment for poisoning by fish is to act on the skin. Besides, therefore, combating the gastro-intestinal and nervous symptoms with opiates, bromide, etc., he endeavored to produce diaphoresis by giving lumps of sugar containing twelve or fourteen drops of sulphuric ether, and exhibited an antispasmodic mixture consisting of syrup of orange, lime-flower and orange-flower water, and sulphuric ether. He allowed the patients to drink hot tea freely. —*Lancet*, October 29, 1887.

ENDOMETRITIS DURING PREGNANCY. — VEIT, of Berlin, in the *Berliner klinisch. Wochenschrift*, No. 35, 1887, does not accept the nomenclature *endometritis decidualis*, but proposes *endometritis gravidarum* as a proper name for this condition. He believes that in these cases endometritis exists prior to pregnancy, but first declares itself as the condition of pregnancy advances. The only treatment possible during pregnancy is that by rest and opium; but, as soon as the pregnancy is passed, the local and general treatment of the disease should be vigorously pushed.

THE TREATMENT OF THE ADVANCED STAGES OF UTERINE CANCER.—BETRIN, of Geneva, in the *Nouvelles Archives d'Obstétrique et de Gynécologie* of October 25, 1887, reports excellent results from the use of tampons dipped in equal parts of terebene (hydrated turpentine and any convenient oil—almond, olive, etc. An abundant preliminary douche of a deodorizing solution of permanganate of potassium should be given, the parts dried with cotton, and from three to five tampons dipped in the mixture of terebene and oil should be placed in contact with the diseased tissues, and retained by a cotton tampon. The results in deodorizing and disinfecting the diseased tissues have been excellent, and no interference with the excretory functions has been observed.

NITRITE OF AMYL IN CHOLERA.—DR. PALM writes as follows of his use of nitrite of amyl in cholera, in the *British Medical Journal* of November 5, 1887:

During an epidemic of cholera in Japan, in 1879, it occurred to me to make a trial of the inhalation of nitrite of amyl in the treatment of the collapse of cholera. I did so upon the consideration that this drug appears to have an antagonistic action to the cholera poison in its effect upon the vasomotor nerves. The latter causes a dilatation and congestion of the vessels of the viscera, and a corresponding contraction of the more superficial vessels; while we have in nitrite of amyl an agent which, whatever its effects may be upon the visceral circulation, produces a marked dilatation of the superficial vessels, and must, therefore, to a corresponding degree, relieve the congestion of the visceral circulation. I found that cholera patients in a state of collapse could inhale it very freely before an effect was produced. My plan was to hold a bottle of it under the nostrils, directing the patient to sniff it up freely, and to repeat this frequently. Under its influence a small, thready pulse increased in volume, and where the pulse at the wrist was imperceptible it became perceptible. I have reason to think that in some cases it was the means of saving life. I regret that owing to the accidental destruction of my notes taken at the time, I can give no exact account of the number or details of cases in which it was made use of, but this hint may be of use to others who will have more opportunity than myself of further testing its value.

FACTORY LEGISLATION AND HYGIENE.—At the recent meeting of the Vienna Congress for Hygiene resolutions were adopted to the effect that children from fourteen to eighteen years should be allowed to work in factories for only a few hours daily, and not at all at night, and those under the age of fourteen should not be employed at all. A resolution was also passed that women should be allowed to work for only a limited number of hours during the day, and that they should never be employed at night. It was desirable that women should not be allowed to work in factories for several weeks after confinement, and that the State should take care that they did not lack the means of subsistence during this period of enforced idleness. The Section agreed in fixing from ten to eleven hours as a full working day, and a further resolution was passed that the observance of Sunday as a day of rest was one of the most urgent hygienic necessities for the working classes. The full advantages of this could only be secured if women were given the opportunity of doing their domestic work on the Saturday. A copy of these resolutions was sent to the Parliaments of all the States which took part in the Congress.—*British Medical Journal*, November 5, 1887.

THE MEDICAL NEWS.

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SATURDAY, NOVEMBER 19, 1887.

THE CROWN PRINCE'S DISEASE.

SIR MORELL MACKENZIE cables THE MEDICAL NEWS, from London, that "although there is no microscopic proof as to the nature of the present growth in the Crown Prince's larynx, it is in my opinion, no doubt, malignant. It is half an inch below and in front of the growth removed by me last summer, of which there is no return. There is, without doubt, limited perichondritis. The œdema which recently appeared was of an acute character, and had entirely passed off when I left San Remo. I think it, however, not unlikely to return in a chronic form."

The inference drawn by many from the nature of the present growth that the initial growth must have been carcinomatous, and that the correctness of the opinion to this effect entertained by some of the Prince's medical attendants at the period of Sir Morell Mackenzie's first summons is thus verified. The contrary opinion of Prof. Virchow, the eminent pathologist who examined the fragments removed by intralaryngeal procedure, seems justified by the fact mentioned in the above dispatch that there has been no recurrence at the point from which the first growth was removed.

Two points of great interest arise in connection with the present phase of the case. One is whether a benign growth has undergone malignant change; and the other, whether exsection of the diseased half of the larynx, for which preparations had been made at the period of Dr. Mackenzie's first visit, would have been better treatment than that adopted by the distinguished specialist. The best pathologists and clinicians, as a rule, assert that histologically benign growths have no tendency to become malignant. A few only think otherwise. It is a matter of clinical history in the practice of some physicians, that benign growths are sometimes followed by malignant ones "as the apparent result of long-continued irritation from the functional activity of the larynx." This may have been the cause of the unfavorable sequence in the case of the Crown Prince. Great disposition to inflammation has been observed from time to time, and functional activity has been noted as injurious.

As far as can be gleaned from the reports at present at hand, there seems as much to hope for from a laryngectomy now as there was six months ago. During these six months, however, the patient has lived in comparative physical comfort, without the sacrifice of his larynx, and without subjection to the immediate perils inseparable from submission to such a serious procedure. This gain is due to the stand taken by Sir Morell Mackenzie; and, whatever may be the ultimate outcome, his conservative treatment has certainly contributed to the welfare of his patient, and probably to the prolongation of his life. Even now it is said that laryngectomy may be safely postponed for weeks, and perhaps for months.

The prospects of a patient with carcinoma of the larynx are extremely unfavorable. Submitted to palliative and symptomatic management, including tracheotomy when called for by dyspnœa, his expectation of life may vary between the limits of eighteen months and four years, according to the character, location, and extent of the local disease and the constitutional vigor of the patient. Subjected to radical treatment by exsection of the larynx, he runs the risk of succumbing in a very short time to the immediate results of the operative procedure; but should that risk be successfully run, his expectation of life is lengthened by several years, possibly by many, provided there be no recurrence. Should recurrence take place within a few months, the operation will not have prolonged the patient's life. If the radical procedure is to hold out any fair prospect of success, it must be undertaken while the disease remains circumscribed in the structures of the larynx. Extension beyond the larynx increases greatly the immediate risks from the operation, and diminishes greatly the probability of ultimate recovery.

The question of laryngectomy becoming urgent at any period of the clinical history of a carcinomatous larynx, the decision must be made promptly. If the operation be declined, the patient must resign himself to the inevitable with what content he may. He cannot expect a rescue by changing his mind after the disease has extended beyond the larynx.

As to the procedure itself, it may be said that aseptic measures have removed from laryngectomy much of the immediate risks that formerly accompanied it. The records of operations performed during the past five years compare so favorably with those of earlier date that in a vigorous individual

with carcinoma confined to the larynx, and free from evidence of glandular involvement or carcinomatous cachexia. The operation may be regarded as advisable when performed with all the precautionary safeguards of modern improved surgical methods.

NEW METHODS OF TREATING PERTUSSIS.

Whatever methods are used in the treatment of this exceedingly troublesome disorder must depend, if used without empiricism, on some particular belief on the part of the physician as to the true cause of the disease. If he thinks that the condition is due to a neurosis, as did most of the older clinicians, and do many of the present day, he must put remedies directed toward the alleviation of the nervous disorder. If, on the other hand, he has confidence in the theory, of much later origin, that the trouble is produced by the presence of some peculiar living entity, his manner of attack must be directed to its primary object. While many other theories have been advanced as to the cause of this disease, we believe that these are the two which have been most generally accepted, and that at present the microbic theory of its causation finds the most general acceptance.

Arguing from this basis, Prof. Binz, as long ago as 1870, claimed that quinine had a specific action in whooping-cough, provided it was given in very large doses in solution, so as to come in contact with the mucous membrane in its passage through the pharynx, and, in 1871, Letzerich announced that the theory of Binz was correct, and that a peculiar microbe did exist.

Still later, Henke, in the *Deutsches Archiv für Klin. Medicin*, Bd. xii. p. 630, reported valuable results obtained by inhalations of quinine, and his reports have been followed by many others, among which may be named those of Parker, Perrera, and Sauerhering. In the hands of all these observers such practices were followed by good results, and their methods of administration only differed in the minor details, such as the proper strength of the solution to be employed, or of the variety of the salt, the hydrochlorate, sulphate, and tannate having been most generally found efficient. In some cases, however, the drug was given by the stomach in solution, in order to act on the mucous membrane of the mouth and pharynx, while in the hands of Henke, for example, the solution was used by inhalation from an atomizer. This latter method would certainly seem the more rational. The strength of the solutions may vary from one to sixty grains to the ounce of water.

Among the other drugs used with a similar object have been salicylic acid, carbolic acid, resorcin, and oil of turpentine; none of them, however, has been as thoroughly tested as the cinchona alkaloid.

Those who support the theory that the disease is due to other causes than a microbe have employed, as every one knows, nearly every drug in the pharmacopœia, without deciding on any one as being much better than the rest.

Thus, Michael has used a very large number of powders made from various substances, notably quinine, which was used more for its action on the nasal mucous membrane than for any antiparasitic effect. Benzoin and bismuth were also employed with a moderate degree of success.

Still others have used local anæsthetics, the most important of which has been cocaine, and even here the reports are quite favorable.

The treatment of individual violent paroxysms is entirely different from that directed to the ultimate relief of the sufferer, and varies greatly with the circumstances of the case. Within the last year or two, inhalations of amyl nitrite have been used several times with marked success, in certain cases where the interference with respiration was severe enough to threaten death.

THE OSTEOGENIC FACTORS IN THE DEVELOPMENT AND REPAIR OF BONE.

In our issue of October 22d we called attention to a paper by Dr. William Macewen, of Glasgow, in regard to the factors in the development and repair of bone. This paper is completed in the November number of the *Annals of Surgery*, and the discussion of the subject is continued in an additional series of propositions, which, to a considerable degree, tend to overturn the accepted views in regard to the *rôle* that the periosteum plays in the production of bone.

Proposition F states that the periosteum does not initiate the reproduction of bone. The proof of this is seen in the fact that if a subperiosteal excision of a healthy adult bone is performed, there will be little or no ossific reproduction. The periosteal tube collapses, and its position is afterward marked by a layer of fibrous connective tissue, which ultimately becomes absorbed. The osseous tissue which is developed under such circumstances is due to the entanglement of osteoblastic cells in the connective tissue, which is pulled out of the Haversian canals during the removal of the periosteum. When matured bone is irritated for a long time good bone is developed, and this is because formative osseous elements have been poured out on the surface of the bone from the Haversian canals during irritation of the bone, and have become entangled in the meshes of the periosteum. A layer of bone is thus formed, which serves as a starting-point for the formation of new bone by the proliferation of the osseous elements. The periosteum, moreover, not only does not enter into the production of callus after frac-

tures, but limits it, and in some cases actually prevents bony union, by its interposition between the fragments.

Proposition G holds that bone may be regenerated independently of the medulla, which may itself be reproduced. This is proved by the well-known fact that in certain instances of osteomyelitis, where the whole of the medulla and interior of a growing bone has been the seat of inflammation, producing a softened purulent pulp, enclosed in a shell of thin, though true bone, representing the cortical layer, the whole of the interior has been washed out, and after a prolonged period complete restoration of the calibre of the bone has resulted, though in some instances the growth in length has been interfered with, probably from involvement of the epiphyses.

Proposition H. The histogenetic phenomena support the foregoing observations, showing that the periosteum does not generate bone.

In conclusion, the author states "that a study of the whole subject, from histogenesis to experimental inquiry and pathological observation, shows that bone is produced and regenerated by proliferation of osteoblasts, and its development and reproduction can take place independently of the medulla and periosteum.

The practical import of these observations of Dr. Macewen is obvious. If the periosteum does not produce or regenerate bone, it is unnecessary to be so particular about its preservation in resections, and osteoplastic operations; whilst portions of loose bone in cases of compound fractures, trephining, and other operations where there is a loss of substance, should be carefully replaced, in the hope that they may serve as grafts, and result in reproduction of the lost parts.

THE VARIATIONS OF THE NORMAL KNEE-JERK.

Since Westphal announced its importance as a symptom in disease, this curious phenomenon has been the subject of many careful investigations. The recent papers of Mitchell and Lewis, in The News, on "The Reinforcement of the Knee-jerk," and of Warren P. Lombard, in *The American Journal of the Medical Sciences* for January last, on the nature of the process, will be fresh in the memory of our readers. The latter gentleman has continued his researches, and in the first number of the new *Journal of Psychology*, issued from the Johns Hopkins University, has published a most thorough and exhaustive study of the variations of the normal knee-jerk, and their relations to the activity of the central nervous system.

The average knee-jerk varies throughout the day, being, as a rule, greatest in the morning, soon after breakfast, and being very much less at night. The extent of the jerk varies very much on different days. The cause of the variability is, to a large extent, the result of changes in the central nervous system. Fatigue, hunger, enervating weather, and sleep, all conditions, in fact, which lower the activity of the cerebro-spinal axis, diminish the knee-jerk, while rest, nourishment, invigorating weather, wakefulness, influences which stimulate the activity of the central nervous system, increase the jerk. For the details of the ingenious apparatus for estimating the vigor of the blow and degree of excursion of the foot we must refer to the original work, the great value of which consists in the fact that we have here, for the first time, a thorough study of the variations of the normal knee-jerk, from which, as a basis, we shall be in a better position to appreciate the differences met with in morbid states.

THE OIL OF TURPENTINE AS AN ANTISEPTIC.

The present era in the history of medicine will, as some one has aptly expressed it, be known as the antiseptic or germicide epoch, and experimental therapeutists everywhere are employed in starting "cultures" and testing the anti-microbic power of the articles of our materia medica. As is usually the case, the call for an increased number of drugs to act in this manner, has been answered by the chemist and pharmacist with their accustomed promptitude, and at present we have laid before us a list of chemical combinations, purporting to be antiseptic or germicidal in their action, which has been evolved *pari passu* with the discovery of the microörganisms. Not satisfied with these, however, investigators go still further, and attempt to discover not only the drugs which are active but those whose effects are virtually negative. An example of this is well represented by the article of Holmfeld in the *Fortschritte der Medicin* of October 1, 1887, in which he calls attention to the effect of the oil of turpentine on germs of various kinds. His method consisted in taking fresh colonies of the micrococcus prodigiosus and staphylococcus aureus. The vessels used were carefully sterilized, and agar-agar and gelatine were used as culture-beds. After some hours, oil of turpentine was applied, and its effects on the life and growth of the germs noted. Under these circumstances it was soon evident that the turpentine, unless applied in large amounts and for a considerable time, produced no effect of sufficient force to enable one to use the drug in ordinary everyday life for the purposes of antisepsis. Its irritant properties when concentrated, and its loss of the little retarding power which it possesses on microörganisms, as regards their growth, on dilution, exclude it from use on the tissues of the patient, and confine its sphere of value to the instruments employed. Certainly, from our present knowledge of the drug, we may rest assured that it is only proper to use it as an antiseptic when nothing better can be obtained.

SOCIETY PROCEEDINGS.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, October 22, 1887.

MORRIS J. LEWIS, M.D., IN THE CHAIR.

DR. F. X. DERCUM reported

A CASE OF UNILATERAL CONVULSIONS AND ANOTHER OF HEMIPLEGIA OCCURRING IN UREMIA.

The following cases are of interest in connection with the observations of Raymond,[1] and of Chantemesse and Tennesson,[2] in the same field, and also in connection with two cases of hemichorea, associated with Bright's disease, recently reported by the writer.[3] They are as follows:

Case I.—H. S., colored, aged sixty-nine years, an inmate of the Philadelphia Almshouse, had, while in the out wards, occasionally suffered from convulsions. On several occasions he had been admitted into the epileptic ward of the hospital. Here it was noticed that he usually had several convulsions in close succession, each lasting about five minutes, and that after the attack was over he would fall asleep. His convulsions were always general, and attended with frothing at the mouth.

Mentally he was much impaired. He had delusions of persecution and sometimes imagined himself unable to walk. He was also at times violent and maniacal during the night, requiring to be strapped in bed.

On August 15, 1887, being much improved, he was, at his own request, again transferred to the out wards.

On August 27th, after having had occasional fits for several days, he was again admitted to the epileptic ward. On this day his convulsions seemed much worse than usual. They were almost continuous, and he was brought into the ward in a semi-conscious condition. In striking contrast with the seizures previously observed, the spasms now existed only on the left side, beginning apparently on the left side of the face, extending quickly to the left arm and thence to the left leg, being less severe in the last-mentioned member. During the quiescent periods it was observed that the left arm was paralyzed, as was also to some extent the left leg. The left side of the face was also paralyzed, the mouth was drawn toward the right, and the left cheek was flaccid. The conjunctiva of the right side was sensitive, but that of the left was not. The urine was drawn and examined for albumen, but none detected. The temperature was 97.2°; pulse 140. The sphincters were relaxed.

After the convulsions had ceased altogether the patient slept. Consciousness had evidently been absent during the attack, but on the following morning, August 28th, it had fully returned. The condition of left hemiplegia, however, persisted. His urine was now examined a second time, and revealed both albumen and casts, the latter in large numbers.

On the evening of the 28th the convulsions recurred, the patient having nineteen in rapid succession. On the morning of the 29th he was again conscious, and talked, but during the day he gradually became weaker and died at one o'clock.

An autopsy was held within the following twenty-four hours, and revealed the following: Calvarium of moderate thickness. Dura very adherent, the brain being removed in the calvarium. Pia not thickened, but its meshes very œdematous. Veins of vertex full. Pia presented milky opacities here and there, and was easily separated from the convolutions, a sub-pial space having been formed, which was distended with lymph; vessels of base extremely atheromatous. Brain as a whole soft, flattening by its own weight. Ventricles large and excessively pale. Choroid plexuses very pale and cystic. Velum interpositum presented whitish granulations. On section, the cortex was found pale and the white matter excessively œdematous. Serial sections of both hemispheres *failed absolutely* to reveal a *focal lesion*.

In the general post-mortem nothing of special importance was found except that the *kidneys were markedly granular* and fatty. The lungs were emphysematous, the heart fatty, and the aorta somewhat atheromatous.

Case II.—J. H., aged eighty-two years, white, in the out wards of the Philadelphia Hospital complained of weakness in the left arm and leg. This continued for four weeks, when he was admitted to the nervous ward of Dr. Mills, temporarily under my care. Here it was noticed that he dragged the left leg a little in walking and that he moved his left arm with difficulty. Sensation on the affected side was also dulled. The hemiparesis grew gradually more and more pronounced and was as sharply defined as a hemiplegia of organic origin, which, indeed, it was at first supposed to be. At last, though sluggish mentally, he was able to reply to questions and to make his wants known in his native language, namely German. Gradually, however, he failed in mind and body, incontinence of urine, delirium, and coma set in, and after having been in the ward two weeks he died. During life the urine had been examined and revealed a small amount of albumen.

On the day following death the autopsy was held and the following conditions noted. Calvarium and dura normal. Pia arachnoid loose and very œdematous, its meshes milky. Vessels of base very atheromatous. Ventricles excessively pale. Choroid plexuses presented numerous large cysts. Velum interpositum infiltrated. Brain very soft. On section, found to be œdematous throughout. Careful serial sections *revealed no focal lesion*.

The kidneys were found to be *much contracted and cystic*, markedly cirrhosed.

The other organs revealed nothing of consequence. The lungs presented some adhesions in the right pleura, the heart valves were thickened, the aorta was atheromatous.

Both of the above cases are doubtless to be relegated to affections of the nervous system occurring during and as a consequence of Bright's disease. Chantemesse and

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[1] Raymond: "Sur quelques accidents consécutifs aux paralysies hémiplégiques de cause cérébrale," Comptes rendus de la Société de Biologie, Mémoires, 1883, p. 185.

[2] Chantemesse et Tennesson: "De l'hémiplégie et de l'hémiplégie épileptiforme dans le mal de Bright," Gazette Médicale, Nos. 1 et 2, 1887.

[3] F. X. Dercum: "Two Cases of Hemichorea Associated with Bright's Disease," Journal of Nervous and Mental Diseases, N. S., August, 1887.

Tenneson,[1] have already recorded two instances of unilateral epilepsy occurring in the course of this affection and have verified one of them by post-mortem examination. Their cases are in every way a counterpart of the case here reported. The convulsions were strictly limited to one side, and the autopsy revealed merely general œdema of the brain and chronic interstitial nephritis.

The objection may be made that these phenomena of hemiplegia, hemichorea,[2] and hemi-eclampsia, are due simply to atheroma of the arteries of the brain, by means of which a portion of the cortex or a tract of the internal capsule may receive an imperfect blood-supply, be shut off, as it were, from its necessary amount, an oligæmia and œdema being the result. The weight of evidence, however, is against this interpretation. There are absolutely no areas of local softening or local necrosis to be detected, and the œdema is not confined to a spot but is general, is evenly diffused, and apparently as much in one hemisphere as in the other. Besides, the ingenious experiments of Raymond[3] leave no doubt as to the possible one-sided action of the nervous system in uræmia. It will be remembered that he first mutilated the sympathetic system of an animal by removing the superior cervical ganglion of one side. In this way he threw the entire nervous apparatus, so to speak, out of balance. He then ligated the hili of both kidneys, and the convulsions that ensued were limited to one side. He repeated the experiment a second time with the same result. It seems as though the two halves of the nervous system bear unequal powers of resistance and that the weakest yields.

Dr. Osler asked if, at the autopsy, special attention was paid to comparing the two sides of the brain. It was some time since he read the articles to which reference had been made, but his impression was that more œdema had been found on the side of the brain opposite to the side on which the paralysis was present. An interesting point in these cases is that it appears to be absolutely impossible in certain cases to make a satisfactory diagnosis between cases of hemiplegia from apoplexy and cases of hemiplegia from uræmia. He recently went over this question with his class in the case of a man brought into the hospital with hemiplegia, unconscious, and with albumen and tube-casts in the urine. He said that it was in all probability a case of hemorrhage, but that it was impossible to exclude positively hemiplegia due to uræmia. He said that it might be a case of œdema of the brain from uræmia, in which the œdema, being more marked on one side of the brain, or from some other cause, the paralysis was unilateral. He had seen one case of unilateral convulsions occurring in a man who was brought into the General Hospital at Montreal some eight or nine years ago. He had convulsions for three or four days. At the autopsy in that case nothing was found in the brain that would account for the convulsions. At that time we were not so familiar with œdema of the brain, or with the relation af œdema of the brain in Bright's disease as we are now.

Dr. James Hendrie Lloyd said that Dr. Dercum may recall the fact that, at the meeting of the American Neurological Society two years ago, he referred to a case similar to those reported. The patient was a boy, aged seventeen years. When he saw him he was in a comatose condition with convulsions, which were confined to the right side of the body. The boy had been a chronic sot, and died a few hours after he saw him. At the autopsy there was nothing found in the brain to account for the condition. The only lesion was the "pig-back" kidney. This case was undoubtedly one in which the symptoms resulted from uræmia. He thought that in the intervals between the convulsions it was possible to demonstrate the fact that the side on which the convulsions occurred was paralyzed.

Dr. Morris J. Lewis said that a man, aged twenty years, a heavy drinker, under his care, had albumen with granular and oily casts in his urine. He suffered with frequent convulsions, which usually followed the periods of heaviest drinking; and on two occasions the convulsions were most marked on the right side, and were followed by paresis, which lasted two or three days. The young man was placed in a position where he could not obtain alcohol, and has apparently made a complete recovery. There is at present no albumen, no casts, and no paresis.

Dr. Dercum said that, to the best of his recollection, the authors to whom he had referred, have noted no local œdema. He had made three post-mortems in cases of well-marked hemi-disease occurring during uræmia, and he had found no more œdema on one side than on the other. The cases reported by Drs. Lloyd and Lewis are of special interest as occurring in young persons. Most of the cases reported have occurred in old people. With reference to local cerebral manifestations from a general cause like uræmia, he recalled the case of a gentleman under his care for several years who suffers from chronic contracted kidney. He now and then has general uræmic convulsions. Some years ago he had the following remarkable seizure. He went down town to attend to some business, and while in a bank he suddenly became aphasic. He was perfectly conscious. The aphasia continued for several hours. This looks like another instance of a local manifestation from a general cause.

MENTAL AFFECTIONS ASSOCIATED WITH CHRONIC BRIGHT'S DISEASE.

Dr. William Osler said that as it was in close connection with the paper of Dr. Dercum, he should like to make some reference to the occurrence of certain mental affections which come on in connection with chronic Bright's disease. It is well known that certain mental phenomena occur in connection with chronic renal diseases besides simple uræmic coma. He had reported one case of violent mania in a man aged forty-two years, the subject of Bright's disease. When brought to the hospital, he had been maniacal for three or four days. He subsequently became comatose and died. A very interesting case was recently under his care in the University Hospital. A man was brought to the hospital Thursday evening. He saw him on Saturday. He was then quiet, in a semi-dosing condition, but could be aroused and gave a very intelligent account of himself. The whole clinical picture was that of chronic interstitial nephritis. He thought it not improbable that the man might pass into a condition of

[1] Loc. cit. [2] Dercum, loc. cit. [3] Loc. cit.

coma. There was nothing to attract special attention to his mental condition, and he did not regard his condition as critical. That night he got out of bed in the absence of the attendant, wandered about the ward and finally jumped out of the window. It was subsequently learned that, before admission to the hospital, he had been violent, requiring two or three men to hold him. We were not told this when he was brought to the hospital. He had no doubt that this was an instance of mental disturbance due to chronic nephritis. He was told by one of the physicians who had attended him that the man was full of delusions. He thought that his wife and others were persecuting him.

He saw another interesting case a year ago last Christmas. This occurred in the practice of Dr. Mullin, of Hamilton, Canada. Here there was also a medico-legal question. It was whether or not the man was in a condition to make a will. There was no doubt as to the existence of chronic Bright's disease. The mental condition was peculiar. He believed that his wife and others had designs upon his life, and it was with difficulty that he could be persuaded to take food. He thought that people were persecuting him. Although he gave a very intelligent account of himself, it was not considered advisable that he should make his will at that time. He was placed upon a somewhat more active treatment than he had previously received. This man subsequently did well, his mind had cleared, and he recovered sufficiently to get about and to make his will.

Dr. Dercum said that the negro who was the subject of uræmic convulsions, had also presented, at various times, periods of maniacal excitement and had also had delusions of persecution.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Special Meeting, September 17, 1887.

The President, Thomas M. Drysdale, M.D., in the Chair.

REMARKS ON THE REMOVAL OF UTERINE FIBROIDS BY ABDOMINAL SECTION.

Dr. George Granville Bantock, of London, began by saying that the tumor which formed the text for his remarks had been removed the day before, from a single woman aged thirty-six, a patient of Dr. Joseph Price, and weighed between five and six pounds. At first sight he had doubted the propriety of operating, because there seemed to be no indication for interference beyond the rate of growth of the tumor, and because the patient, as he had been assured by Dr. Price, very much minimized the extent of her sufferings. The matter was thoroughly explained to her, the danger of the operation was made clear, and it was pointed out, that if operation were necessary at some time, she would never be in a more favorable condition for it. She decided in the affirmative, which was fortunate, for it would be seen that the tumor had in its upper part already undergone cystiform degeneration, an incision into the cyst, giving exit to over half a pint of a thin sero-sanguinolent fluid. He was happy to say that the condition of the patient was most satisfactory.

Dr. Bantock then proceeded to the general subject of the removal of uterine fibroids by abdominal section, which, he said, was a very important one. He pointed out that operators were to be divided into two schools: the one preferring to treat the pedicle by the intra-peritoneal method, the other preferring the extra-peritoneal. The advocates of the former based their arguments on the success which has resulted in the operation of ovariotomy, from the introduction of the intra-peritoneal ligature of the pedicle. But it was scarcely necessary for him to show how fallacious such reasoning was, for the conditions were so dissimilar. It was true that there were many different forms of ovarian pedicle: it might be large or small, long or short, broad or narrow, thick or thin, but they were all essentially of the same character and capable of being more or less easily secured by ligature which might be confidently relied on if properly applied. On the other hand, the uterine stump is very different. It is composed of muscular fibre, white and yellow elastic tissue, forming a structure so peculiar that under the pressure of a ligature tied with as great a strain as it will bear, it yields before the compressing force to such an extent that in a few hours the ligature may be quite loose. This occurs even when the pressure is exerted with the aid of a screw, and he pointed out to those who were present at the operation that at the first tightening of the screw there was complete arrest of the bleeding for the time, but that at intervals of ten or fifteen minutes the screw would take a turn or more with facility. In this way an amount of constriction was attainable which, if attempted at once, would probably lead to the breaking of the wire or the cutting of the tissues. He had just come from the meeting of the American Gynecological Society, where he had read a paper on the subject of the treatment of the pedicle, and where the opposite school was so well represented in the person of Dr. Martin of Berlin, and he had the satisfaction of feeling that, for the time at least, he had established his position.

Now the pedicle in this operation varies very much, not in the nature of the tissues forming it, but in the extent and manner in which the parts are involved. Thus the tumor may spring by a distinct pedicle, from the fundus, or some part of the free surface of the uterus. In such a case the application of the extra-peritoneal method is very simple, and his results have been uniformly good; for in thirteen of these cases, all the patients recovered. On the other hand, of all the cases of this kind treated by the ligature and intra-peritoneal method, five in number, only one was successful. Moreover, he had attempted the method in several cases and had been obliged to resort to the extra-peritoneal method after failure of the ligature, though preceded by compression with very powerful forceps. When the body of the uterus is extensively involved in the growth then matters may be very much complicated. The broad and ovarian ligaments may be so lax that it is a simple matter to include ovaries and uterus in one encircling loop. Such a case is little more difficult than an ovariotomy done with the clamp. But the ovarian ligament may be so short on one side that it has to be ligatured separately. That had to be done in the case that furnished the occasion for these remarks. As a rule, it is advisable in such a case to secure the uterus and other ovary first, to transfix the stump with the supporting pins placed across the abdominal wound, to cut away the tumor, trim the stump, and then remove the ovary, lest in tightening the

instrument any part of the ovarian pedicle should be pulled through the loop of the ligature. In the case under consideration it was not necessary to observe this order as the broad ligament on the left side was very lax while the ovarian ligament was very short. On the right side the ovary could be raised quite out of the pelvis. Sometimes both ovaries are thus tied down and have to be secured separately. The same precautions must be observed.

But the disease may involve the whole of the body of the uterus, properly so called. Then one must make a pedicle, and this is the most difficult state of things to overcome. It was for such a state of things he had devised his method of partially enucleating the body of the uterus and the lower portion of the tumor. The large vessels of the ovarian plexus are secured on each side by two pairs of forceps or stout ligatures, the lower of each pair being placed an inch higher than the level of the proposed constriction. Then the peritoneal investment is divided all round on a level between the upper and lower forceps, and reflected downward toward the cervix and nearly to the level at which the loop of the serre-nœud is to be applied. In doing this it is necessary to seize the peritoneal edges with forceps placed at intervals of about an inch. When the reflection is completed these instruments are collected and raised up and the wire loop is applied outside of the peritoneum. Sometimes, and especially when it is desirable that the patient should not lose much blood, it is well to throw an elastic ligature around the uterus and broad ligaments as soon as the division of the peritoneum is effected. Applied in this way, it serves to draw in the broad ligaments toward the uterus and to enucleate the tumor. It is to be removed as soon as the serre-nœud is applied above or outside it, of course. In this way an inch or more in the length of the pedicle may be gained. It should be remembered, that in this method it is necessary to have the stump so long that the whole of the constricted portion must be outside the peritoneal cavity; in which position it is to be retained by the transfixing pins, which pass through the stump just outside the wire loop and rest on the parietes on each side of the wound. While the peritoneum is being reflected, the tumor should be held up by the assistant, and thus it rises gradually out of the pelvis with the uterus. One precaution to be observed very carefully in these cases, is to transfix with the pins before cutting away the tumors. He once lost a patient through the non-observance of this precaution. The last steps are to cut away the uterine tissue to within a quarter of an inch of the pins, and to trim the loose peritoneum by cutting it away to within half an inch of the loop and then stitching it from the opposite side across the surface of the stump, to hold it all well together. Before closing the wound give the screw a final turn if it will allow of it. Remember that the distal portion of the stump must slough off, that it is desirable that the amount of this tissue should be as small as possible, and that it is necessary to keep it out of the peritoneal cavity.

You may have heard great stress being laid upon the character of the mucus in the uterus and cervical canal, and you may have observed great care used in wiping it away and setting aside the sponge employed for the purpose. On operator has gone so far as to pass an iodoform pessary down the canal for the purpose of disinfecting. This is a practice with which he has no sympathy; nor is it rational or founded on any sound reasoning. He looked on it as a bugbear, and regarded it as a means of withdrawing attention from other and more important matters of detail. As to comparative results, Martin had just reported 84 cases with a mortality of 25; while Dr. Bantock was able to point to 72 cases with only 12 deaths.

There is some misapprehension of the value of terms. Some operations are termed aseptic, but the result only can prove any operation to have been aseptic. All operations are or are not performed upon an antiseptic method. Dr. Bantock has now discarded all antiseptic agents. When Listerism was first introduced, he used it in all its details, and continued to do so until he lost a patient, and had others affected by what he felt sure was carbolic poisoning. An easy and sure test for this is the absence of sulphates from the urine. In one case of carbolic poisoning the temperature rose to 107° and the patient was almost moribund; by means of wet sheets and ice-packing the temperature was brought down to normal in eight hours, and she recovered.

In one fatal case the kidneys were found congested; there had been acute suppression of urine. After this experience he gradually reduced the strength of the carbolic washing fluids to one per cent. Coincidently the proportion of sulphates in the urine increased and there was an absence of high temperature and other symptoms of hitherto unknown origin. Now as 1 to 40 is the weakest solution that can be useful as a germicide, a one per cent. solution could serve no good purpose, and the carbolic acid was omitted altogether. Afterward he tried doing without the spray, and results steadily improved. Of his last one hundred ovariotomies only three have been lost, and of the last seventy-eight only one was lost. But ovarian statistics do not apply to uterine operations.

Dr. W. H. Parish was present at the operation yesterday morning, and it was a complete illustration of what is necessary in all operations. First, in saving blood; Dr. Bantock was very careful to use hemostatic forceps to secure every bleeding point in the abdominal wound before opening the peritoneum. The same economy of blood was observable in every step of the operation. Great care was also taken to avoid shock from cooling the intestines by the contact of air and consequent evaporation. Large, flat sponges were pressed in to cover the intestines and prevent their escape or the entrance of blood or discharges into the peritoneal cavity. He is extremely careful about the cleansing of his sponges before reintroducing them into the wound. In placing sutures, he first passed several silkworm-gut stitches close to one another near the stump. After the wound was entirely closed it was covered with clean absorbent gauze—a pile of this was placed over the stump. The whole was secured with a cotton binder, using no adhesive plaster. So, while using no germicide at any time, every care was taken to make the operation an aseptic one. Would Dr. Bantock consider it safe to transfix, ligate, and drop the pedicle in case of a uterine fibroid having a thin pedicle as long as a finger? Dr. Parish had done so on one occasion and the patient died.

Dr. Bantock replied that a uterine fibroid with a finger-like pedicle, he had never seen. He has observed

bone smaller than half his wrist. He thinks the extra-peritoneal method safer in every case.

Dr. Longaker made some remarks about securing the peritoneum over the base of the stump, and asked what kind of suture Dr. Bantock preferred for that purpose.

Dr. Bantock said that any kind of suture would do, it was merely to secure a neat stump that would not spread out over the wound. He prefers fine silkworm-gut for sutures. He introduces his needle from within, close to the edge of the peritoneum, and makes sure of a hold in muscle or aponeurosis, and then through the subcutaneous fat and skin to secure a firm hold and prevent future hernia.

Stated Meeting, October 6, 1887.

The President, Thomas M. Drysdale, M.D., in the Chair.

Dr. M. Price reported a case of

ADHERENT INTESTINES FROM PERITONITIS, SIMULATING FIBROID TUMOR.

Mary J., colored, aged seventeen years, received a kick in the belly from a horse, about eighteen months ago. She was confined to her bed for a number of weeks, and was a confirmed invalid up to the time of operation, suffering great pain in the lower part of the abdomen, the region of the injury. She was unable to work or do anything toward her own maintenance. Upon examination, a hard mass was found high up and to the right of the uterus. Owing to her condition and the repeated efforts for her relief, it was decided to open her and see if the offending cause could be removed. This was done June 17, 1887. Drs. C. Penrose and J. Price, assisting, and Dr. W. Welsh present. The bowels were found completely matted together with an ill defined mass at the right side. Nothing was found that could be removed. The omentum could not be found. Dr. J. Price suggested the separation of all the old adhesions of the bowels, peritoneum, and mesentery. These adhesions involved the entire length of the small intestine; binding the folds of the mesentery and knuckles of intestine in one solid mass. The adhesions were of such strength that many of them had to be cut through with scissors. The scissors, hand, and sponge were the instruments used in the separation of the adhesions. This method was followed until every knuckle of intestine and fold of peritoneum and omentum was separated. The bowel was almost completely occluded by the bands. Irrigation with distilled water at a temperature of 110° completed the operation. After this operation was finished, the indurated mass could not be found. She reacted well, and was freely purged with epsom salts. She made an uninterrupted recovery, and said she had less pain the day after operation than at any time after the kick.

She is now perfectly well and able to be about her work. As a distinct surgical procedure, Dr. Price knows of no similar case on record. He opened a man a year ago for great pain in the region of the gall-bladder, and tore loose the adherent viscera from the abdominal wall so as to complete his examination, but finding nothing wrong, closed up the incision; the pain was cured! but this operation was not performed with the same object in view as in the first case. Dr. Duncan in his book on *Diseases of Women*, page 49, gives a case in point. "I remember a case diagnosed as a fibrous tumor of the uterus, a hard rounded mass as big as a child's head, above the brim of the pelvis, very slightly tender, and fixing the uterus. The young lady died, and at the post-mortem examination it was found that there was no fibrous tumor at all. It was adhesive perimetritis, a pocket of coherent intestines, which formed a hard mass and had led to the deception of eminent and experienced gynecologists."

SPINDLE-CELLED SARCOMA OF THE OVARY.

Dr. M. Price also reported the case of Mrs. M., aged forty-four years. Married twenty years, sterile; always regular; had always enjoyed good health up to January 1, 1887, when she was greatly troubled with inability to hold her water and with constant pelvic pain, with a feeling of fulness, and an entire suppression of the menstrual flow, which had been regular up to that date. The incontinence of urine was relieved about the middle of February by the escape of the tumor into the abdominal cavity. The tumor grew rapidly, and when it had reached some two inches above the umbilicus, the patient thought she might be pregnant, and sought advice as to her condition. Upon examination I found the uterus small, the left ovary and tube healthy and posterior to the tumor. The right ovary could not be found, but in its position the pedicle of the tumor could be mapped out. The removal of the tumor was advised. Operation June 11, 1887, with assistance of Drs. J. Price, Burns, and Penrose. A spindle-celled sarcoma of the ovary, weighing five pounds, was removed. The patient reacted well. On the evening of the second day there was a slight rise of temperature and quickening of the pulse. Fearing peritonitis, I ordered a tablespoonful of epsom salts every two hours until the bowels were freely moved. Six doses were given; the next day the pains had disappeared and temperature and pulse were normal. She has made a perfect recovery.

Dr. Drysdale remarked that the successful result of the operation in this case was a proof of its justifiability, but he thought that, generally speaking, it would be of doubtful advantage to perform abdominal section for the relief of the consequences of peritonitis, as adhesions would be likely to reform immediately after the operation.

Dr. Price explained that the active movements excited by the epsom salts prevented new adhesions from forming. He made some remarks on ovarian tumors, and stated that although seeming to be of fibroid character and called fibroid at time of removal, microscopic examination had, in his experience, uniformly shown them to be spindle-celled sarcomata.

Dr. Parish remarked that it is always allowable to break up inflammatory adhesions in abdominal operations. The new adhesions formed are not firm.

Dr. H. A. Kelly said that a year ago he had examined a small tumor, about the size of a pea, distinctly arising from the ovary, and found it to be a fibroid; it was quite hard. He had, three months ago, removed from a girl of eleven years, a large sarcoma of the ovary; she recovered. The intestines might be bound together into a mass by plastic lymph, and if there was no unnatural position of any portion, no kink nor strangulation, no symptoms would be developed. The patient would feel no pain and would be conscious of nothing

wrong. In an operation all bands and local adhesions should be broken up and kinks or knuckles should be liberated.

Dr. J. Price said that trouble will sometimes follow breaking up of old adhesions in the removal of cystomata, local pain and alarming local and general symptoms. He thinks the matting together of the intestines resulting from general peritonitis a cause of death in some few cases, and could be averted by prompt surgical interference. He described a case which he had seen recently as consultant, and in which he advised immediate operation. The attending physician would not consent until he thought his patient dying from peritonitis. The abdomen was now opened and the pus and lymph removed by irrigation and sponging; all adhesions were freed, and the patient commenced to improve immediately and is to-day a well woman. The operation was the only way in which her life could be saved. In his brother's case the intestines were freed by free dissection, pressure was applied afterward to hold the intestines back in the loins and keep them immobilized. The hemorrhage during these operations was very slight. Dr. J. Hoffmann had, in a recent operation in which Dr. Price assisted him, found fourteen inches of the large intestine adherent in an operation for the relief of an umbilical hernia, requiring a long and masterly dissection. If such adhesions are not liberated, the operation of dividing the stricture and simply liberating the strangulated portion may be a failure in saving life. Here, again, Mr. Tait, in his deep surgical wisdom recognizes the importance of opening the abdomen for strangulated hernia in the median line, that inflammatory adhesions and strictures may be liberated in the most scientific manner. Adhesions in pelvic inflammations are very common, and in operations they should always be released. Hard bodies are frequently discovered in the tube and ovaries. Their appearance suggests fibroid growths, but they are In reality sarcomatous. The round ligaments alone do not seem liable to disease.

Dr. Montgomery was very much interested in the subject of this paper. The method of first breaking up the adhesions and then preventing their reproduction by peristaltic motion excited by saline purgatives is similar in principle to the treatment of ankylosis in joints; breaking up adhesions and passive motion subsequently. Doubtless all present can bear witness to the beneficial action of saline laxatives in dysentery and other inflammatory intestinal affections. He had recently assisted Dr. Warder in the removal of an abdominal growth. The diagnosis had been uterine fibroid, but when the abdomen was opened the tumor was found to be of ovarian origin. It was very large and hard. Dr. Daland had made an examination of it and reported it to be fibroid in character. There was considerable ascitic fluid.

Dr. Longaker made some remarks on the clinical history of adhesions. Some months ago, the specimens from a case of obstruction of the bowels ending in death were shown by him at the Pathological Society, This was a case of encysted, retro-uterine hæmatocele, the appendages on both sides being involved in the mass of adhesions, from which mass there passed a band to the lower portion of the descending colon about nine inches above the sigmoid flexure, where it was so attached as to form an acute flexure. At this point the bowel was in a gangrenous state and the colon above was greatly distended while the portion below the obstruction had a lumen just admitting the passage of the little finger. The patient manifested no symptom of difficulty until four or five days after labor, when some nausea and vomiting occurred, The points of interest are, that while the autopsy demonstrated the feasibility of an operation, the symptoms were at no time sufficiently definite to warrant a diagnosis. The patient must have had the trouble a long time without it giving rise to any but vague and indefinite symptoms. As involution of the uterus took place this knuckle of bowel was slowly dragged down into the pelvis.

Dr. M. Price, in closing, said that the appearance of his first described patient was remarkable. The long-continued suffering from peritonitis had so wasted her that she looked as if she had passed through a wringing-machine; her chest and belly were flattened out. If no symptoms resulted from the adhesions, there would be no call to operate for their relief. But in all cases the intestines have sharp bends and curves, and form knuckles, which are caught under lymph bands, which tie the intestines together and contract them, and sooner or later symptoms of obstruction must be developed. He does not believe in antiseptic surgery as applied to the abdomen and the peritoneum. If he did believe in microbes, tadpoles, and the other insects so much talked about, he would be afraid to operate, for their presence, if all that is said about them were true, would do more harm than the peritonitis, and more than the operation would do good.

Dr. H. A. Kelly considered this a most important subject, and one on which we are greatly in need of enlightenment. His own experience had taught him several interesting facts in regard to peritoneal adhesions. Bands of adhesion, or the adhesion of a small area of intestine in such a way as to make it liable to kink, doubling it sharply on itself, are exceedingly dangerous, and should never be allowed to remain. But there is a class of adhesions by no means dangerous, not productive of symptoms, and which should not be interfered with. We must bear in mind that the adhesion of opposing serous surfaces is a conservative process preventing the continuous pouring out of effusion, and, in event of tuberculous peritonitis, probably starving out the disease by taking away its pabulum. The least dangerous variety of adhesion is the general adhesion of the gut *in situ*. He operated two years ago on a case in which all the intestine adhered, looking like one great bag when the peritoneum was opened. It was a case of tubercular peritonitis tending to a cure in this way. He simply dried out the peritoneum, and besprinkled it with iodoform to check secretion, and the patient, who has been constantly under his eye ever since, has not had any trouble from her adhesions. Also those cases of adhesions of lesser intestines in the pelvis, in which they lie adherent in normal relative position, in full round curves without kink, do not, so far as he has been able to observe in a large number of cases, ever do harm.

Dr. H. A. Kelly read a paper on

PALPATION AND SOUNDING OF THE FEMALE URETERS,

in which he stated that he made it his routine practice

to examine all gynecological cases with reference to the condition of the ureters. Since Dr. Sänger had demonstrated to him, in the summer of 1886, the facility with which both ureters could be outlined through the antero-vaginal wall, and traced back to the posterior pelvic wall, he had made a long series of confirmatory observations, and, in some instances, demonstrated the value of such observation by finding disease of the ureter. He had added to this a method of his own, by which the ureter is picked up and handled bimanually, and with the exact knowledge thus gained as to its position, he then proceeds to catheterize it with Pawlik's catheter. He detailed a case in which the catheter was thus introduced free-hand into the ureter, and passed back to the posterior pelvic wall. The urine escaped in little gushes of from ten to fifteen drops every ten or fifteen seconds, evidently accumulating beyond the catheter until the pressure became sufficient to dilate the ureter and let the urine pass down into the eye of the instrument. About three drachms of urine were drawn in this way, and, on removing the catheter, about five ounces of urine were drawn from the bladder. A disadvantage of Pawlik's catheter is that the sharp eye sometimes catches the mucous membrane of the ureter.

Dr. Kelly showed some sounds which he had had constructed some time since, when studying the subject, but considered them inferior to Pawlik's instrument. The value of knowledge which may be thus gained was illustrated by reference to a recent case of severe operation, removing adherent, pus-containing ovaries and tubes. On the second day urine appeared in the tube, and flowed freely. The only way of determining from which kidney this flow came was by catheterization of the ureter.

Dr. Charles M. Wilson thought that such an instrument used in cases with a history of pyelitis might be the cause of serious trouble. He has tried in a number of cases to palpate the ureters by Dr. Kelly's method; in a few elderly women he has succeeded, but in nulliparæ with firm tissues he could not distinguish the ureters.

Dr. J. Price considered these methods of examining the ureters of but little practical use, for trouble does not exist in the ureters alone, but in all the pelvic organs and kidneys and when these are distorted by new growths and inflammatory products it would be very difficult to locate the ureters. The case cited by Dr. Kelly in his own experience shows how difficult it is even with the fingers in the pelvis while removing diseased appendages, to locate the ureters through one layer of peritoneum, to say nothing of the conditions when we have to deal with inflamed and thickened vaginal walls.

Dr. Montgomery thought it would require extreme skill to pass such fine instruments without doing injury to the mucous membrane. Dr. Bowman, in a paper read before the Ninth International Medical Congress recommended dilatation of the ureters and washing out of the pelves of the kidneys and ureters in pyelitis; even advising splitting of the bladder through the vagina in order to reach the orifices of the ureters.

Dr. Walker was very much interested in this subject and has been desirous of accomplishing this procedure in some patients that he had in his care in the Philadelphia Hospital. He had succeeded in palpating the ureters in males but not in females. This ability to pass a catheter into the ureter will enable the surgeon to determine in any given case which kidney is diseased.

Dr. Kelly, in closing, said that there is no danger in the exploration; the instrument must be lightly poised between thumb and forefinger and gently passed in, or not at all. The sensation when the end of the catheter is caught by the ureter and it begins to pass up the tube is characteristic. Dr. Walker is certainly correct in his high estimate of the great value of the possibility of sounding the ureters free-hand in certain puzzling renal cases. As to Dr. Price's remark, cases in which there is much pelvic cellulitis are not those in which we desire to sound the ureters. Ureteritis is a distinct, well defined disease. He treated one case which he cured by opening the base of the bladder. The whole trouble lay in the extremities of the ureters. The first to suggest splitting the vesico-vaginal septum and rolling the ureteral orifices and thus under guidance of the eye catheterizing them, was Dr. Emmet. Pawlik's work was but the culmination of a vast number of attempts to accomplish this, from Suchmanns, who attempted to clamp the orifices of the ureters, and Silbermann, who tried to choke them by a bag of quicksilver, and Simon's dilatation of the urethra, and Neumann and Grünfeld, who tried to reach it by endoscopic methods. Sänger showed how readily the ureters can be palpated, and Dr. Kelly thinks that by combining a careful palpation according to his own method and following this with catheterization of the ureters already so distinctly located, he has added a method of real value, simplifying this free-hand difficult subject. Great skill is not required thus to palpate the ureters.

Dr. Hirst reported a case of

TYPHOID FEVER IN A PREGNANT WOMAN.

The impression still prevails in some quarters among general practitioners, that typhoid fever will not attack a pregnant woman; an idea originating doubtless in the teaching of the famous Rokitansky, who believed that the condition of pregnancy granted a woman immunity from this disease. It is unnecessary, of course, to point out the fallacy of this opinion or to refer to the statistics of 322 cases of typhoid fever during pregnancy collected by Charpentier. The case now reported occurred in a young primigravida, who was admitted to the Philadelphia Hospital in the second week of the attack. The disease presented all the characteristic symptoms in a typical manner, leaving no doubt as to the diagnosis. On the tenth day after her admission she gave birth to a child which corresponded in its development to the seventh month of intrauterine life. The infant died two weeks after birth, but, unfortunately, the cause of death was not ascertained. One interesting feature in this case was the effect of labor upon the temperature. As uterine contractions began the woman's temperature was 104.2°, but it steadily lowered as labor advanced, until directly after the expulsion of the child it was only 95°. Under the influence of external heat and stimulants hypodermatically, the patient reacted and made a good recovery.

Dr. Longaker remarked that his experience taught him that high temperature in typhoid fever in the pregnant woman was incompatible with fetal life. He had

been recently associated with such a case which ended fatally.

Dr. Charles M. Wilson had under his care a pregnant woman with typhoid fever in whom the temperature rose as high as 106° and was not reducible for several hours, but the child survived and was delivered alive at term. Numerous similar cases are on record, so a temperature as high as 106° is not necessarily fatal to fœtal life.

Dr. Montgomery remarked that in the majority of cases maternal typhoid fever is fatal to fœtal life. Premature labor has occurred in all such cases that have come under his notice. In one such case the temperature rose to 105°; miscarriage occurred, and was followed by a fall of temperature to 97° with collapse, from which it was very difficult to restore her. The temperature again rose to 105°, and after a protracted illness the patient recovered.

Dr. W. S. Stewart remarked that in one case of typhoid fever, about the sixth month of pregnancy, in which the patient became emaciated to a remarkable degree, she recovered and was delivered of a living child at term. The temperature did not rise very high.

Dr. J. C. Da Costa stated that these cases do not all abort or die. He recalled one case in particular, with a temperature of 105½°, with characteristic typhoid eruption and intestinal hemorrhage; four stools containing, each, from one to two pints of blood having been passed, which went on to full term, twins being delivered alive.

Dr. Hirst, in closing, stated that although the temperature of his patient remained at 95° for over twelve hours, despite all that could be done to raise it, she did not appear in collapse, but looked and felt quite comfortable. The prevalent idea as to the danger to the fœtus of high temperature in the mother, would appear to be erroneous. Runge's well-known experiments are often quoted to support the view that the fœtus is in danger if the mother's temperature reaches 104°; but Doléris, in 1883, showed that if the maternal temperature is gradually and not quickly raised, the fœtus remains unaffected. Runge, in a second set of experiments, found that Doléris's conclusions were correct. Preyer, on one occasion, actually found a temperature of 110° in the anus of a living fetus.

Dr. Parish considered that the high temperature in disease was accompanied by blood changes which contributed to the fatal result.

Dr. J. M. Baldy read a paper on the administration of

SALINES IN PERITONITIS FOLLOWING ABDOMINAL SECTION.

Twenty-five per cent. of the deaths following abdominal section are attributable to peritonitis (Agnew). Taking the hint from Mr. Tait, he never takes any steps to prevent a movement of the bowels after operation, and routinely administers salines on the second or third day, repeated in small doses, especially when there are distention and persistent bilious vomiting. The results following this course have been most satisfactory. He had used salines in large concentrated doses (one ounce), repeated several times and aided by large (two quarts) turpentine enemata in fully developed peritonitis, with best results. The symptoms begin to subside almost immediately when the bowels commence to discharge watery stools. The treatment is in every way preferable to the use of opium, and is logically infinitely better than the narcotic. Opium only does good by relieving pain, at times, in enormous doses. The bowels are already "in splints" from the disease and do not need the aid of the drug for that purpose. Opium, however, does a world of harm. It helps keep the bowels in splints and so favors the formation of those great masses of adherent intestine and organized bands which we find so often the cause of subsequent intestinal obstruction. Still worse, it closes all the avenues of escape for the poisonous products of inflammation found in this great lymph sac, and in this manner keeps up the inflammation much more surely than the rubbing together of the peritoneal surfaces will. With salines, however, an active peristaltic movement is kept up, which tends to prevent the formation of adhesions and bands. They drain the abdominal cavity of the products of inflammation, and by depleting the blood-vessels of the intestines and peritoneum tend to prevent the throwing out and organizing of lymph to any great extent. There are, of course, dangers in the production of large, watery stools, but the treatment must be used with care and judgment. He would suggest that in the after-treatment of abdominal section the bowels be moved as a matter of routine on the second or third day after operation. That on the first access of pain and soreness with distention, a brisk purgative be given at once. In case a general peritonitis is developed, the production of large watery stools should be secured as quickly as possible, by purgation and stimulant enemata; the amount of purgation to be controlled in accordance with the strength of the patient. The salines, as suggested originally by Mr. Tait, are perhaps the best of the purgatives for the purpose.

Dr. Watson remarked that Mr. Tait had been led to the use of salines because he had always observed bloody serum in the peritoneal cavity after death from peritonitis. Dr. Watson has been in the habit of using saline laxatives whenever he has found signs of beginning peritonitis after labor. Once after ovariotomy, and again after a very difficult labor he found their use of very decided benefit in cutting short threatened attacks of peritonitis; both cases had made good recoveries.

Dr. Longaker remarked that Dr. Bantock, while in this country recently, expressed entire want of faith in any benefit to be gained from the use of salines in peritonitis.

Dr. Parish explained that peritonitis as seen by Dr. Bantock was always of septic origin, and the patients would die under any treatment. That form of peritonitis is preventible. The saline treatment is quite reasonable; it is an adaptation of an old method of treating dysentery and inflammatory diseases of the intestines.

Dr. Walker had employed salines as depleting agents in various inflammatory diseases. When the depletory action is desired, concentrated solutions should be administered. A weak solution will act simply as a laxative.

Dr. Cleemann had had success and failure with both the opium and saline methods of treating peritonitis. Salines had been recommended years ago by Dr. Meigs in the treatment of peritonitis. Several suc-

cessive attacks of typhlitis in one patient had been subdued under the use of opium. A case of peritonitis under his care had shown progressive relief after every movement of the bowels, the result of a dose of castor oil. As the opium treatment has been adopted by the majority of physicians, it is presumably the best.

Dr. Kelly believed that serious consequences will often be avoided by a timely free depletory purgation. He had used calomel and soda, but now considered salines better. All peritonitis is not, however, as the speaker would urge, to be so treated. There is a dry form, which he has verified by post-mortem examination, which corresponds to the friction dry stage of pleurisy, which is better treated by opium. We must bear in mind that the depletion of the intestinal villi only quickens the absorptive activity of the peritoneum, and a large accumulation within the peritoneum may really be too great to be thus disposed of. Here the drainage tube saves lives by disposing of the excessive and often unavoidable serous weeping from wounded peritoneal surfaces. He calls this his *fifth emunctory*, and it is better than all the natural emunctories in these cases, when properly handled, disposing of accumulations at once, without in the least taxing the powers of the patient. Next to the drainage tube, the best emunctory is that nearest the field of activity, the intestinal tract, and, next, but much inferior to this, come the kidneys, then the skin, and, lastly, the lungs.

Dr. Montgomery resorts to closely restricted food and drink and the administration of concentrated doses of salines in commencing or threatened peritonitis. He adopted this method recently in a case of peritonitis consequent on the presence of a malignant tumor which could not be removed. He did not use a drainage tube, but kept the patient on restricted diet and drink, applied a light bandage, and administered salines.

Dr. J. Price thought the preparatory treatment of paramount importance in abdominal surgery. After an operation opium is simply harmful, while salines are soothing to the patient and prevent flatulent distention. Upon the slightest indication of peritonitis, use them freely and it is simply wonderful what rapid disposition is made of the thirty-seven varieties, according to Sternberg, of rhizopods and boa-constrictors. Again the drainage tube is of the greatest importance in preventing peritonitis. It usually does its work, if managed well, in the first twelve or twenty-four hours.

Dr. Baldy does not think there is such a thing as dry peritonitis. The idea of administering salines is to deplete, and concentrated solutions should be used. The use of opium by the majority does not prove it to be correct.

NEWS ITEMS.

The Results Accomplished by the Illinois State Board of Health.—The results of the enforcement of the New Medical Practice Act in Illinois, are as follows:

The new law has required much labor, but the result has been satisfactory. Eleven suits have been pushed to successful conclusions. The most signal benefit has been in ridding the State of the itinerant nostrum-venders, with their brass-band and other accompaniments. July 1st, twenty of these shows were in the State, which tendered $1500 per month in fees for licenses, all of which were refused.

One of the evidences of the good work of the Board is the gradually falling proportion of graduates to matriculates. It is now about 31.5. In the regular schools it has fallen to 30.33.—*Sanitary News*, October 22, 1887.

A Proposed Test for Gleditschine.—Dr. Claiborne, the introducer of this substance to the profession, proposes, in the *Medical Record* of November 5, 1887, to have its genuineness tested by a committee of two experts who are to make the preparation under direction, and then to pass judgment upon it. Drs. Shrady and Foster, of New York, have agreed to select the committee.

The Health of Prisoners.—Dr. Watkins, Inspector of the State Board of Health of Louisiana, has recently examined the prisoners in the parish prison of New Orleans. He found a number of the inmates suffering from acute dropsy of the legs, arms, face, and body, due to confinement and insufficient and unwholesome food. Each prisoner is allowed a piece of bread and a pint of tea early in the morning, and one meal consisting of soup, the beef cooked in the soup, and bread. The beef is supplied by a contractor at five cents and a half per pound, and has been repeatedly condemned by the resident surgeon.—*Science*, November 4, 1887.

Hot Water in Surgery.—Possibly our readers have seen the failure in the use of hot water as a hæmostatic which Dr. Varick describes, in the *New York Medical Journal* of October 15, 1887:

An amusing instance of failure to comprehend the principles involved in the subject under discussion occurred recently in a hospital not a thousand miles from New York. A surgeon, having occasion to perform an amputation at the lower part of the leg, and after ligating the vessels, was annoyed by a somewhat free oozing which he was unable to control. A gentleman present, who had, on several occasions witnessed the hæmostatic effect of hot water in St. Francis and Jersey City hospitals, suggested its use in this case. The hot water was brought, and cold water added until it could be easily borne by the hand, then by means of a sponge it was applied for a moment several times. This proving ineffectual, the sponge, now saturated with water scarcely more than blood-warm, was held at a distance above the wound and the water allowed to trickle over the surface. It is needless to say this also failed. The verdict of the sapient operator was that "hot water is no good."

Canned Peas and Copper.—The State Board of Health of New York has decided, after securing analyses of various samples, that the following goods are within the conditions hereinafter prescribed declared to be exempt and permitted to be sold under the provisions of the said act:

Canned peas or beans in the preparation of which copper has been used, provided that the proportion of metallic copper shall not exceed three-fourths of a grain per avoirdupois pound of peas or beans equivalent to

three grains of crystallized sulphate of copper, and that the same be plainly stated on the label.

Mutilation of Children for Debt in China.—In the report of the Customs Inspector at Shanghai a case is reported in which a young man had lost an eye by puncture for his father's debt: the physician called in attendance was successful in saving the other eye, but the injured eye was lost. The practice is said to be common in some districts of China, and the attention of the Government has been called to it.

The Death of Dr. Kraus, editor of the *Wiener medicinische Zeitung* is announced, at the age of fifty-nine.

M. Pasteur's Health is said to be still so feeble as to necessitate his confinement to the house.

An International Speech.—At the visit of the Vienna Congress of Hygiene to Buda Pesth, the speech delivered by M. Sasvári was the most striking illustration of internationalism. He commenced in Magyar, and, after a few complimentary words to his Hungarian colleagues, assured the Austrian and German guests—himself speaking in good German—that the Hungarians recognized how much their civilization was due to the Germanic races. Then, speaking in French, he explained that Hungary admired the great French nation, which, marching in the vanguard of progress, had given to the world the highest and most generous ideas. Now, changing from French to Italian, he spoke of the glories of ancient Rome, to be revived at no distant date. Finally, concluding in fluent English, he greeted the brave children of Great Britain, who had borne the banner of civilization to the uttermost regions of the globe. Here the speech seemed ended, but, recognizing among the delegates the dignified features and high turban of the Mahomedan Burgomaster of Serajevo, he again rose, and, in the Servian-Croatian language, hailed the presence of this Oriental functionary as typifying the union of the East and the West for the furtherance of the cause of hygiene.—*Lancet*, November 5, 1887.

Healthy and Unhealthy Occupations.—The English Registrar-General has made a comparison between healthy and unhealthy occupations. Assuming the normal average death-rate of the community as the unit of comparison, and calling it 1000, particular occupations may be regarded as healthy or unhealthy according as the death-rates among those pursuing them fall above or below that figure. The most healthy occupation appears to be that of minister of religion, whose rate is 556. Next are gardeners and nurserymen, 599; farmers and graziers, 631; agricultural laborers, 701; schoolmasters, 719; and grocers, coal-merchants, paper, lace, and hosiery manufacturers, wheelwrights, shipbuilders, and coal-miners, with all of whom the average death-rate is under 775. The most unhealthy occupations are the trades connected with the liquor-traffic and hotel-service, with which the death-rate is 2205; following these are general laborers in London, 2020; costermongers, bankers, and street-sellers, 1879; innkeepers, etc., 1521; and brewers, 1361. After the trades concerned with alcohol, the highest rates are furnished by occupations that involve the breathing of dust—other than coal-dust—and exposure to lead-poisoning. The death-rate among butchers is also high, 1170.—*Popular Science Monthly*, October, 1887.

The Food of American Workmen.—In his American Association paper on "Food of Working-men and its Relation to Work Done," Prof. L. O. Otwater said that statistics of the dietaries of considerable numbers of Americans, mostly of the working-classes, show that their food is ample in amount, and includes large proportions of meat. Chemical examinations of the dietaries showed them to be richer in active nutritive material and potential energy than even the large quantities would imply. This is because they contain so great proportions of meat and other nitrogenous and fatty substances. Comparing the standard of diet prevailing among the working-men of Massachusetts with that of Germany, it is shown that laborers in Massachusetts average just about one-half more than the German standard requires. It thus appears that the food of the American laboring-man is much more nutritious on the average than that of his European competitors. It is also shown that he turns off much more work than the European working-man. He is better paid, better housed, better clothed, and better fed than the European. He has better opportunities for self-development, more to stimulate his ambition, and more hope of reward if his work is efficient. These factors are all connected, but the explanation of his superior capacity for work is to be found largely in his superior nourishment.—*Popular Science Monthly*, October, 1887.

The Influence of the Civil War upon the Number of Insane.—Dr. Palmer states that "the late civil war, no doubt, has contributed toward increasing the number of insane, as well as modifying the type of mental disease. But few were rendered insane by the war that would not have broken down by other exciting causes. A large proportion of the soldiers that served in the war, and lived to return home, were reduced in mental and physical vigor. The disabilities thus acquired have influenced their children, imparting to them a delicacy of organization and susceptibility to external influences, often leading to mental disease. During the past few years several of these children have been admitted into institutions. Thus it will appear that the influence of a great and momentous event, acting upon the past, is made potent through laws of transmission to the present generation by producing mental and physical degeneracy."—*American Journal of Insanity*, October, 1887.

The Hygienic Value of Gas and Electricity, as Sources of Light.—The last number of the *Gesundheits Ingenieur* contains a paper by Professor Dobroslawin, of St. Petersburg, on the comparative use of gas and electricity for lighting theatres. Referring to the interesting experiments made by Professor Pettenkofer and Dr. Renk, Professor Dobroslawin, with the assistance of Drs. Kowolkowsky and Bosaroff, made, last February, during the three days' carnival at St. Petersburg, when the largest crowds fill the theatres, experiments on the temperature and ventilation of the

"Grosse" and "Alexander" theatres, lighted with gas, and the "Mariar" theatre, lighted with electricity. These three theatres gave, each, two performances daily, and each held about 1600 people. The thermometers were so placed as to be on a level with the audience. The carbonic acid was determined by the Pettenkofer method. As every theatregoer knows, the temperature falls between the acts, and it was found that the temperature in the galleries did not fall as rapidly as in the parterre. As a result, the Professor thinks that people seated in the parterre are more apt to take a cold than those in the upper parts of the house. The highest degree of temperature by electric-lighting was 25° C. (77° F.), and with gas 33° C. (91.4 F°.) The Professor does not think that the difference of air is noticeable with either kind of lighting. Finally, the Professor concludes that electricity is far superior to gas from the standpoint of health.—*Sanitary Engineer*, November 5, 1887.

THE ANALYSIS OF A "CURE FOR CANCER."—Pharmacist MOERK reports, in the *American Journal of Pharmacy* for November, 1887, his analysis of a "specific" for cancer, which has been extensively used by the inhabitants of Pennsylvania and New Jersey. It is purported to consist largely of "horse-sorrel."

The result of the analysis is that the powder contains

Moisture	0.69
Charcoal	36.82
Carbonate	26.07
Extractive	6.40
Ash	4.35
Arsenious oxide	25.67
	100.00

The editor states that it is probable that the powder is made by mixing two parts of arsenious acid with one part of wood charcoal, and that the deviation from this proportion is simply the result of the difference in the specific gravity of the two ingredients favoring a partial separation of the heavy arsenic. This proportion gives arsenic far in excess of that contained in the arsenical powders of Swediaur, Cosme, Dupuytren, Pluckett, and others.

DRINK LEGISLATION IN AUSTRIA.—The Austrian Government have, it is stated, introduced into the Reichsrath a strong measure for the prevention of drunkenness. The reason alleged is the alarming deterioration in the physique of young men enrolled for military service, owing to the spread of spirit drinking amongst the humbler classes. It will be interesting to see if the provisions of this measure are accepted. They would be difficult to carry out in this country, where freedom even to get drunk is still jealously guarded. Spirit shops are to be closed at five on Saturday afternoon, and to remain so till five on Monday morning. Ordinary storekeepers are not to be allowed to sell spirits, the sale of which is to be restricted to public houses, confectioners, and specially licensed stores. Dealers serving spirits to intoxicated persons are to be liable to arrest or fine. No debt for spirits consumed on the premises can be recovered by law if the amount exceeds the value of five quarts. The magistrates are empowered to forbid retailers to serve spirits to habitual drunkards for any period up to twelve months. Similar legislation already exists in Galicia. The proposal now is to extend it to all Austria. The preamble of the measure sets forth that it is a direct outcome of the Hygienic Congress.—*Lancet*, November 5, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY, FROM NOVEMBER 8 TO NOVEMBER 14, 1887.

GREENLEAF, CHARLES R., *Major and Surgeon*.—Par. 8, *S. O. 218, A. G. O.*, October 25, 1887, directing Surgeon Greenleaf to visit the recruiting depots and rendezvous at certain places, is amended to include Davenport, Iowa; Quincy, Ill.; and Evansville, Ind.—*S. O. 257, A. G. O.*, November 4, 1887.

LORING, LEONARD Y., *Captain and Assistant Surgeon*.—Ordered for duty at Fort Mojave, Arizona Territory, upon the expiration of his present sick leave of absence.—*S. O. 258, A. G. O.*, November 5, 1887.

BYRNE, CHARLES B., *Captain and Assistant Surgeon*.—Relieved from temporary duty at Fort McHenry, Maryland, and will return to his proper station, Washington Barracks, District of Columbia.—*S. O. 242, Division of the Atlantic*, November 11, 1887.

PETTEY, HARRY O., *Captain and Assistant Surgeon*.—Now on duty at Fort Wayne, Michigan, ordered for temporary duty with troops stationed at Highwood, near Chicago, Illinois.—*S. O. 258, A. G. O.*, November 5, 1887.

IVES, F. J., *First Lieutenant and Assistant Surgeon*.—Granted leave of absence for one month, to take effect on or about the 15th instant.—*S. O. 113, Department of the Platte*, November 5, 1887.

WALKER, F. V., *First Lieutenant and Assistant Surgeon*.—Relieved from duty at Post of San Antonio, and assigned to duty at Fort Ringgold, Texas.—*Department of Texas*, November 8, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 12, 1887.

HEATH, J. C., *Surgeon*.—Detached from the "Marion," proceed home, and wait orders.

CRAIG, J. C., *Passed Assistant Surgeon*.—Detached from the "Marion," proceed home, and wait orders.

WELLS, H. M., *Medical Inspector*.—Detached from the "Trenton," proceed home, and wait orders.

PECK, GEORGE J., *Medical Director*.—Ordered to Washington, D. C., as a member of the Examining Board.

AYRES, JOSEPH G., *Surgeon*.—Ordered to the "Galena," to relieve Surgeon F. L. DuBois.

DUBOIS, F. L., *Surgeon*.—Detached from the "Galena," proceed home, and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING NOVEMBER 12, 1887.

WYMAN, WALTER, *Surgeon*.—To proceed to Louisville, Ky., and Memphis, Tenn., as inspector, November 2, 1887.

URQUHART, F. W., *Passed Assistant Surgeon*.—Relieved from duty at Cape Charles Quarantine; ordered to Norfolk, Virginia, November 9, 1887.

MACKNIGHT, G. M., *Assistant Surgeon*.—When relieved, to report station at Chicago, Illinois, November 3, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

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ORIGINAL ARTICLES.

AN ANALYSIS OF TWO HUNDRED AND SEVEN CASES OF CARCINOMA OF THE BREAST.

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UP to May of the present year, I had seen in private or in hospital practice, or in consultation, and kept a record of, 14 cysts and 251 neoplasms of the female breast. Of the cysts, 10 were retention cysts—6 having been evolution and 4 involution cysts, while of the new growths, 207 were carcinomata. 19 sarcomata, 24 fibromata, and 1 was an adenoma. Hence, 82.47 per cent. of the neoplasms were carcinomatous, a proportion which closely corresponds with the records of other surgeons. Thus, of 481 tumors observed by Bryant,[1] 400, or 83.16 per cent., were carcinomatous, while of 440 from the practice of Billroth,[2] 375, or 85 per cent., were of the same nature. The object of the present communication is to present a succinct analysis of my notes of the carcinomatous growths, with the hope of throwing additional light upon their life history and proper treatment.

I have met with the disease as early as the twenty-fifth, and as late as the seventy-second year, the average being 47.6 years. Of the 207 cases,

6	first appeared between		20	and	29	years	of	age.
39	"	"	30	"	39	"	"	
78	"	"	40	"	49	"	"	
62	"	"	50	"	59	"	"	
21	"	"	60	"	69	"	"	
1	"	"	70	"	79	"	"	

Of the entire number, not one was observed during the developmental state of the mamma; 45, or 21.73 per cent., appeared during the period of its greatest activity; and 162, or 78.26 per cent., began during its functional decline.

121 women, or 58.45 per cent., were menstruating at the date of the development of the disease, and only 8.21 per cent. of the entire number had been irregular in the performance of that function.

Of 197 women in whom the social condition is noted, 175, or 88.83 per cent., were or had been married, and 22, or 11.17 per cent., were single. Of 154 in whom it is mentioned, 133, or 86.36 per cent., had borne children, and of these, rather more than nine-tenths were prolific and had nursed their children; while 21, or 13.64 per cent., were sterile. In only one did the tumor appear during pregnancy, and in none during lactation. The general health of the patients when they first came under observation was excellent in 69.56 per cent., indifferent in 17.39 per cent., and bad in 13.04 per cent., so that less than one-third were injuriously influenced by the progress of the affection. In only 10, or 4.83 per cent., was it inherited in the direct line of descent—that is to say, from parents, grandparents, or great-grandparents.

The disease was ascribable to traumatism in 20, or 9.66 per cent. of the 207 cases; but in only 9 of these did the tumor develop within six months. Of the 133 parous women, 11, or 8.27 per cent., had suffered from puerperal mastitis, but in only 2 was it clear that the tumor started from the lump or induration left by the inflammation. In 5 cases, or 2.41 per cent., there was antecedent nonpuerperal mastitis, and in 4 of these the disease developed at the site of the inflammation. In 5 cases, or 2.41 per cent., the nipples had been the seat of crusts and scales for several years—in one case for thirty-two years—before the appearance of the tumor. In 6 cases, or 2.9 per cent., it began as Paget's disease of the nipple, or as malignant papillary dermatitis.

In reviewing the foregoing facts, it is evident that my personal experience throws little light upon the causation of carcinoma, although it differs in several important points from views which have been engrafted upon, and are still held by the profession. The general nutrition of the patients was not nearly so bad as many teachers would lead us to believe, since more than two-thirds of my patients enjoyed capital health, and their appearance did not denote that they were suffering from so grave a malady. The inheritance of the disease, which is believed to be so common, not only by the laity but by medical men, is not supported by my figures. I do not mean by inheritance a family history of cancer among relatives of carcinomatous subjects, as aunts, uncles, cousins, brothers, and sisters, but an undoubted history of transmission by direct descent, that is, from parents, grandparents, or greatgrandparents. In studying the subject of cysts of the breast, I find that in not less than 5, or 7 per cent. of 70 subjects of retention cysts, there was a clear history of carcinoma in the ancestors, the mothers of two and the grandmothers of two having died of carcinoma of the breast, and the grandmother of the fifth having perished from carcinoma of the uterus. These interesting facts merely indicate to my mind that a peculiarity of structure is transmitted, through which, in the one case, the contracting fibrous stroma of the breast irritates the glandular elements, and incites an atypical growth of the epithelium, thereby giving rise to carcinoma, while in the second case the contracting fibrous tissue constricts some of the ducts, through which cysts develop. The influence of puerperal mastitis, upon which much stress has been laid, was not marked, when it is considered that in less than one per cent. was it demonstrable that

[1] Practice of Surgery, 4th Amer. ed., pp. 769 and 773.

[2] Die Krankheiten der Brustdrüsen, p. 134.

the tumor appeared at the site of the inflammation, so that if it were a factor at all, it was less efficient than was nonpuerperal mastitis. Scaly nipples, by obstructing the mouths of the ducts, may be precursors, but the evidence on this point is too limited to be of any value. Paget's disease should not be included among the causes, since histological investigations show that it is a malignant inflammation of the skin of the nipple and areola secondary to carcinoma of the orifices of the milk ducts, so that carcinoma is actually present, although in an unusual situation. Traumatism appears to be the most common of all the efficient causes, and I presume that no one will deny that it does provoke an atypical growth of epithelium in involuting breasts which results in carcinoma. There certainly can be no connection between the social condition of the patients and childbearing, since the proportion existing between married and single women, and between parous and sterile women suffering from the disease is about the same as in health. From these statements I believe that age, which simply denotes senility of the tissues of the breast, is the only factor which predisposes to the occurrence of carcinoma; that injury is the only proven existing cause; and that hereditary transmission tends to perpetuate the disease.

With the exception of 5 cases in which several tumors existed in one breast, the disease began as a solitary growth, in the right breast in 101, and in the left in 106. It was seated in

The upper hemisphere in	. . .	4 cases.
" lower "	" . .	7 "
" outer "	" . .	8 "
" inner "	" . .	6 "
The upper and outer quadrant in	. .	66 cases.
" " " inner	" " .	19 "
" lower " outer	" . .	10 "
" " " inner	" " .	12 "
The vicinity of the nipple and areola in		75 "

Hence, the seats of election were the upper and outer portions of the gland, and the immediate vicinity of the areola and nipple.

In one case a scirrhous carcinoma occupied one breast, and a fibroma its fellow, while in a second case the right breast was the seat of three fibromata, and the left contained three fibromata and a scirrhous carcinoma.

The nipple was retracted in 108, or 52.17 per cent. of the entire number, the large proportion being due to the fact that in 75 the tumor was seated near the nipple and areola. In 15, or 7.24 per cent., there was a spontaneous discharge from the nipple, the fluid being, as a rule, either watery and bloody, or thick and lactescent; while in two additional cases a milky fluid—the so-called cancer-juice—could be expressed. In one-third of the cases the discharge preceded the detection of the tumor.

In eight-tenths of the cases, pain of a sharp, intermittent character was experienced; in about 15 per cent. there was merely a sensation of discomfort; while in about 5 per cent. there was no suffering whatever. In exceptional instances it was the first symptom that attracted attention.

Invasion of the skin, the earliest sign of regional infection, was met in 155, or 74.87 per cent. of the 207 cases. The cutaneous invasion was characterized by discoloration or adhesion in 78, or 37.68 per cent.; by the formation of tubers or nodules in 33, or 15.94 per cent.; and by ulceration in 44, or 21.25 per cent. In only one case did the tubers occupy the entire surface of the chest, and undergo atrophic changes, thereby constituting the affection known as *cancer en cuirasse*. In four of the cases the lymphatic vessels of the skin constituted elevated, convex ridges, as large as crows' quills, but in three of these they were filled with lymph-cells, and in only one were they plugged with polymorphous epithelial cells.

Infection of the skin was met with as early as two weeks, and as late as twenty-nine months, the average having been 12.6 months. Adhesion occurred, on an average, in 9.5 months; discoloration in 10.1 months; nodules in 12.3 months; and ulceration in 15.8 months.

Immobility of the breast on the chest, or invasion of the pectoral fascia or muscle, was witnessed in 31, or in 15 per cent. of the cases. It occurred as early as the second, and as late as the twenty-seventh month, the average having been 16.9 months. Distinct nodules were also found in 20.93 per cent. of my operations in the pectoralis major muscle, and in one case in the pectoralis minor muscle, and in the periosteum of the sixth rib.

The opposite breast was invaded in 8, or 3.86 per cent. of all cases, the original seat of the disease having been the right mamma in 6. It was a late sign, appearing, on an average, at 21.5 months, although it was witnessed as early as five, and as late as fifty-eight months. In all of these cases it was preceded by invasion of the skin and glands associated with the first growth, and in two of these ulceration was present. Although I have included implication of the opposite breast among the signs of local extension of the disease, it is probable that in most of the examples it was an independent outbreak.

Infection of the axillary lymphatic glands was detected in 136, or 65.70 per cent. of all cases; and along with these the supraclavicular glands were involved in 15, the subclavicular in 3, and the cervical in 2. This statement does not, however, indicate the real frequency of glandular invasion, since, in my late operations, in which I always clear out the axilla, I have found that these bodies were carcinomatous in 95.35 per cent. of all instances, and Kuester[1] states that, of 117 similar operations, in only 2 was there no axillary disease. I have witnessed glandular involvement as early as three weeks, and as late as twenty-nine months, but the average date of its detection was 13.2 months. In two of my cases it was discovered by the patients before the tumor was perceived.

My opportunity for making post-mortem examinations of women dead of carcinoma have been so few that they are not of much value. In six autopsies of subjects in whom the disease had pursued a natural course, metastatic deposits were found in all.

[1] Deutsche med. Wochenschrift, 1883, No. 17, p. 258.

One was a case of atrophying scirrhus that had lasted for seventeen years and seven months. The remaining five died at periods varying from twenty months to five years and two months, the average date of death having been thirty-seven months and twenty-four days.

Of my first 100 cases, the subsequent histories are unfortunately most imperfect. Of these I can only say that 7 ran a natural course, and that their average life was 33.6 months, and metastases were discovered in the 3 cases which were inspected post-mortem; and that 55 were subjected to operation, of which 1 died; there was no recurrence in 1 in two years; 2 died with recurrence, their average life having been 44.6 months, and 9 recurred, on an average in 7 months, but their further history could not be traced. Hence, 91.75 per cent. of the cases were marked by local reproduction, and I was unable to find a single permanent recovery. In all of these cases the old operation was performed, that is to say, the nipple and a portion of the skin were circumscribed by two incisions, the mamma was dissected out of its bed of fat, any glands that were perceptible in the axilla prior to the operation were removed, and the wound was nicely approximated by sutures. These results led me to abandon the partial and inadequate operation for the thorough and complete procedure which I instituted in my second series of cases.

Of the succeeding 107 cases, I am enabled to speak with certainty in 53. Of these 10 died without, and 43 were subjected to, operation. Of the 10 which ran a natural course, all were dead, with visceral deposits in 3 as demonstrated post-mortem. These patients lived, respectively, for nine, twelve, eighteen, twenty, twenty-five, thirty-two, thirty-eight, fifty, sixty-two, and seventy-four months, their average life having been 34 months.

Of the 43 operations, 2 died—1 from fat embolism, and 1 from pneumonia, and in 5 the patients were lost sight of after recovery. Of the remaining 36, 12 died with local reproduction; 1 died with recurrence and metastases; 2 were alive with recurrence; 1 was alive with recurrence and metastases; 20 remained well, or died of some intercurrent disease, but 3 had had recurrences.

It will thus be seen that local reproduction was met with in 52.77 per cent. of the operations. Out of 17 of these 19 cases in which the date could be fixed, 10 recurred in six months, 4 in from seven to twelve months, and 3 in from thirteen to seventeen months, the average having been 7 months. The recurrent disease was seated in or near the cicatrix in 5, in the axilla alone in 8, and in both localities in 6.

Of the thirteen patients who died with recurrence the average life was 25 months, the shortest having been six and the longest sixty months. Hence, the life of these patients was shorter by nine months than was that of the ten patients who were not interfered with.

Of the 20 subjects who remain well, or who perished from other affections without recurrence, 5 were dead and 15 were alive. Of the former,

1	lived	for	7	years	and	10	months.
1	"	"	.....			23	"
1	"	"	.....			21	"
1	"	"	.....			17	"
1	"	"	.....			2	"

Of the living,

1	remains	well	for	8	years	and	3 months.
1	"	"	"	8	"	"	2 "
2	remain	"	"	5	"	"	11 "
1	remains	"	"	3	"	"	5 "
1	"	"	"	3	"	"	1 "
1	"	"	"	2	"	"	9 "
1	"	"	"	2	"	"	8 "
1	"	"	"	2	"	"	1 "
1	"	"	"	1	"	"	8 "
1	"	"	"	1	"	"	6 "
2	"	"	"	.....			12 "
1	"	"	"	.....			8 "
1	"	"	"	.....			6 "

If the permanent recoveries were based upon freedom from recurrence after seventeen months, the latest period which I have observed, these 20 cases would show 14 cures; but in determining the date at which recovery may be said to be definite, surgeons accept the dictum of Volkmann that a cure is rendered almost certain if the patient has survived over three years without local or general recurrence after the last operation, or if she has died of some intercurrent malady under the same conditions. Applying this test, it will be seen that of the 36 operations in which the result could be traced, 7, or 19.44 per cent., recovered permanently. The average time of cure was 6 years and 1 month, and the disease had existed before operation, on an average, for 9⅓ months. When I state that in all of my operations the axilla was cleared out, and that in 5 of these 7 cures the axillary glands were largely involved, the degree of success must be considered remarkable. As only 2, or 4.65 per cent., of the subjects died from the immediate effects of the operation, and 19.44 were permanently relieved, the propriety of removing the glands along with amputation of the breast cannot admit of question. That the axilla should be cleared out in every instance in which infected glands cannot be detected prior to operation, is clearly shown by the fact, that of sixteen of my cases of this nature, in only two were the glands not diseased. Hence, my experience demonstrates that the glands may be expected to be involved in 87.5 per cent. of all cases in which they cannot be felt through the integuments of the axilla. In Kuester's[1] practice the proportion of glandular implication under similar circumstances is somewhat larger, as his last sixty-five cases indicate that the glands were infected in fifty-seven, or nearly 92 per cent.

The operation which I perform, and which I was the first to advocate in my *Treatise on Tumors of the Mammary Gland*, published in 1880, is a thorough one, the object being to remove all tissues which the experience of centuries has demonstrated serve as the sources of recurrence. As the operation will be fully described and illustrated in an early number of *The American Journal of the Medical Sciences*, it need only be stated at this time that, no matter

[1] Deutsche Zeitschrift für Chirurgie, Bd. xxvi. p. 143.

what the situation of the tumor may be, or whether glands can or cannot be detected in the armpit, the entire breast, with all the skin covering it, the parammary fat, and the fascia of the pectoral muscle are cleanly dissected away, and that the axillary contents are extirpated. It need scarcely be added that aseptic precautions are strictly observed.

THE TREATMENT AND PROPHYLAXIS OF ANGINA TONSILLARIS.

By H. V. HOFFMANN, M.D.,
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The tonsils are (lymphatic) glands, the numerous ducts (lacunæ and follicles) of which undergo many changes, namely, they become distended and elongated, and are thereby converted into cavities filled with viscid secretion and pus; these changes are due to inflammation. The lumen of these altered ducts, as well as those in the normal tonsils, are almost in direct continuation of the lymphatic system, as also with the venous system; this is due to the thinness of their walls, especially those that have undergone pathological changes. If the orifices of these ducts, which open into the oral cavity, become occluded, it will be readily seen how they furnish a most favorable nidus for the development of bacteria and other specific poisons, the germs of which find in these ducts a protected shelter where they develop unmolested.

During the act of deglutition, especially when respiration has been carried on through the month, a favorable opportunity is afforded for infectious particles and specific poisons to enter the orifices of the ducts, whence they penetrate the ducts, and there become tightly lodged. That the specific virus of diphtheria, as well as the infectious material of scarlet fever, likewise gains access into the system through the same channel is undoubted; and that many other infectious diseases also get into the blood in the same manner, seems to me to be very plausible.

The almost simultaneous development of a number of cases of tonsillitis in a certain locality (endemic) is, without doubt, due to the development of the germs in the ducts of the glands, there being an especial predisposition to an attack in those in whom pathological changes, as before described, have already taken place.

My therapeutics in these cases of tonsillitis consists in applying pressure (squeezing) to the tonsils (from below upward) with a wad of cotton wrapped about as thick as the little finger around the point of a dressing forceps, and dipped in a mixture of tinct. nuci vomicæ et glycerini, equal parts. The removal of the foreign matters, which have a tendency to cause inflammation, by this method at first causes some pain, but the relief obtained from it is so great that you will find your patients asking to have it repeated in a few hours. The use of a gargle of potassium chlorate, and the administration, at night, of a moderately large dose of quinine materially assist in the cure.

After the patient has recovered from the attack of tonsillitis, we begin our measures for the prevention of the return of any more attacks of tonsillitis, for the patient is bound to have relapses—and you will meet with many patients who have suffered repeatedly from attacks of angina tonsillaris.

For the purpose of putting the tonsils in a condition to resist attacks of angina the ordinary blunt hook will be almost the only instrument required. If you simply inspect the tonsils by using only a tongue depressor, you will not be able to give a positive opinion of the condition of the glands—if they are filled with pus, or if they have become impregnated with substances which are more or less deleterious to the blood; to give a positive opinion you must make use of some hooked instrument (tenaculum). When the blunt hook is made use of in closer examinations of the tonsils and is allowed to glide over the tonsils from above downward it will be found to enter depressions in the gland caused by previous attacks of tonsillitis. From these depressions there will often well up, unexpectedly, a fluid, yellow pus, or the normal secretion of the tonsils which has become converted into thick, hard, caseous particles, and which is often possessed of such a penetrating odor that the fetor which issues from the mouth nauseates the patient and those with whom he comes in contact. In these cases it is best to allow the tenaculum to sink to the base of the depressions and then to perforate the mucous membrane, allowing the opening to appear on the oral mucous membrane and then with a quick motion tear through the intervening membrane; by this means the previously existing cavity or recess becomes converted into a slit or cleft, which, during every act of swallowing, opens, and thereby empties itself, so that no inflammatory products can attach themselves.

The principle of the practice of this trifling operation for the prophylaxis of tonsillitis, is based on the view that there shall not exist, either in the tonsils or posterior thereto, any opening which has not been thoroughly explored to its base and then laid open and converted into a cleft through which the blunt hook must pass smoothly without becoming caught in any pocket.

In some few serious cases, or in some of long standing, it may be found necessary, in addition to the above procedure, to remove a part, or the entire tonsil. In other cases it will be necessary to remove only a piece of the mucous membrane. This latter must be done in those cases in which, in the act of swallowing, the mucous membrane will act as a lid to the fissure or slit, and thereby prevent it from emptying "itself of its contents. It is, however, advisable to endeavor to preserve as much of the tonsil as possible, as it is my belief that the fermenting properties of the tonsillar secretion are at least a great help if not an important agent in the process of digestion.

For the purpose of removal there will be required a long hooked forceps, or a dressing forceps, a tonsil bistoury, and a pair of curved scissors for the purpose of cutting down to the base of any pus passage, the base of which is not permeable owing to the presence of a tough scar tissue which may be so dense that it will be found impossible to lacerate it

with the blunt hook, and which must therefore be cut open with the scissors. It is, however, much better to tear through than to cut with the scissors (although this may be accomplished, as I have shown, by using a blunt hook, which has its inner edges sharpened), because the wound produced by the scissors will heal up in an undesirable manner. The little operation is finished by applying to the wound—from which there is but little bleeding—a pledget of cotton dipped in a mixture of iodine and glycerine, after which the patient must abstain from the use of warm victuals and drinks, as they may cause pain. A lukewarm gargle, composed of a weak solution of common salt, or one composed of a weak solution of potass. chlorate should be used; during the summer (if the operation is performed during this time) small pieces of ice may be taken into the mouth; often, however, nothing at all is requisite, because the following day the patients seldom experience any discomfort.

It happens but seldom and then only in patients of a nervous disposition, that both tonsils cannot be operated upon at one sitting, and these cases seldom require more than two or three sittings. This operation is soon followed by the disappearance of the chronic redness of the gums, a symptom which is always coexisting and a positive proof of the presence of pus accumulations in the tonsils, and any chronic pharyngitis that may have been present will also be found to have greatly improved or entirely disappeared without the use of any medicaments whatsoever.

It is very desirable and favorable to a rapid radical cure that the patient should frequently have the tonsils swabbed with iod. glycerin., so that a healthy mucous membrane results, and one that does not easily bleed and which shall act as a resisting barrier between the blood and lymph systems and the outer world.

There still remains to be discussed the question, whether the prevention of inflammation could not be as readily if not better accomplished by the use of the galvano-cautery, scarification with a knife, or by performing tonsillotomy! The first two of these procedures are without doubt beneficial, because the cavities in the tonsils are thereby laid bare and cauterized. But if this result is achieved, it is more due to "blind luck" than anything else, and still more depending upon chance is the formation of a scar, for after the use of the galvano-cautery it is not always that cicatrization readily occurs owing to the continual contraction; and even if the scar is well formed it is often the cause of the development of new recesses and pus-filled cavities, which, on account of the scar tissue, it will be found very difficult to lay bare.

My argument against the removal of the tonsils with the tonsillotome is, that by this method there is removed more of the secreting mucous membrane of the gland than there is with the galvano-cautery, and also the circumstance, that after the removal of the tonsil it is still necessary to look for and to open the cavities which are sure to remain after the performance of tonsillotomy, and this becomes so much more difficult on account of the dense scar that remains after the use of the tonsillotome. The partial excision for the purpose of laying bare a deep cavity which may exist behind the gland is often imperatively demanded, but may be more easily reached by the use of the blunt hook.

It is advisable (especially in those patients who want to feel assured that they are thoroughly protected against angina tonsillaris) to have them come to your office about six months after the operation for the purpose of inspection, and it is well to recommend them to call again after the lapse of another six months—preferably during spring or fall—in order to be absolutely certain.

It is in the laying open of the normal ducts of the tonsils in young children who have never had an attack of angina, herpetic or diphtheritic affection of the glands, but who are predisposed thereto on account of the congenitally thick spongy condition of the tonsils, as also by reason of the history of tonsillar inflammation in their families, that we achieve the happiest results. In these cases in children, the ducts may be very readily laid bare, as they do not penetrate very deeply into the gland; the operation may be made absolutely painless by first applying cocaine. The thickened tonsils rapidly shrink, and their immunity against inflammations seems, according to my observations, up to the present time, to be thoroughly established. It is my belief that children thus treated have also less to fear from an attack of diphtheria, than those who receive the most devoted care and attention during such an attack; just as in traumatic diphtheria, here it is surely easier to prevent an attack of it by the use of antiseptic treatment, than it is to cure a case.

I was led to make this investigation by finding in my endeavors to learn the origin of diminution in the power of accommodation, that it was so constantly associated with tonsillitis, and that on the latter being removed the accommodation also improved.

SURGICAL CONSIDERATIONS OF THE ABDOMINAL COMPLICATIONS OF TYPHOID FEVER.

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DURING a recent surgical survey of Europe I took pains to interrogate those whom I met upon various subjects which have had more than ordinary interest for me. Perhaps most interesting has been the topic of which I now propose to speak, namely, the question of surgical interference in the abdominal complications of typhoid fever.

My inquiries met with but one affirmative response—that was in Birmingham. There Mr. T. H. Bartleet during the past winter had operated for perforating typhoid ulcer. Perforation was diagnosed by the resident physician, at whose urgent request the attending physician gave sanction for surgical interference, and Mr. Bartleet was called in. He made a median incision, and great fecal extravasation was discovered upon opening the peritoneal cavity. An unsuccessful hurried search was made for the bowel

opening, the cavity irrigated, a drain put in, and the parietal incision closed. The patient died during the second day after operation.

Since my return a single contribution upon this subject has appeared in literature: the report of a case operated upon in 1885, by Prof. Kussmaul, of Strasburg, and reported by Lücke in the *Deutsche Zeitschr. für Chirurg.*, 1886–87, xxv. 1–4. I give an abstract of the important points of this, to be, historic case:

A woman, aged twenty-eight years, was admitted to the Strasburg Obstetrical Clinic, on September 22, 1885, and very shortly afterward confined normally. The puerperium was tardy, and she gradually developed a typhoid condition. This became so marked on October 14th as to justify a positive diagnosis of typhoid fever. All went well until the night of the 22d of October, when she was suddenly taken with agonizing pain in the abdomen, and symptoms of collapse. In ten minutes she was seized with continuous chills, was cold, pale, and bathed with cold perspiration; pulse 180, and small; much vomiting, pain upon palpation of abdomen, and tenesmus present. The patient was a few hours later transferred to the surgical clinic with the accompanying diagnosis of perforated typhoid ulcer.

Prof. Kussmaul saw the case almost immediately, and determined upon abdominal section. Upon commencing operation the patient's condition showed: cold extremities, pulse small and weak, belly moderately distended and painful, great shock. Precautions were: warm room, legs carefully wrapped, rigid antisepsis. An incision was then carried from the umbilicus to the symphysis pubis. The incised tissues were found œdematous, and upon opening the peritoneum much dark, flaky, feculent fluid escaped. The intestines were pasted together and covered with fibrinous exudate. The coils of the small intestine were carefully drawn out, examined, and covered with hot moist towels: they were found quite adherent to one another. One small perforation was found about a foot and a half above the ileo-cæcal valve. From it flowed yellow feculent material. The cæcum and vermiform appendix were negative; mesenteric glands enlarged. That portion of the gut including the perforation was excised and stitched with Lembert sutures, the peritoneal cavity cleansed thoroughly by irrigation with salicylic solution and sponging, a large drain placed in position, and the abdominal wound closed. The patient died in eleven hours without reacting from shock.

Necropsy proved the presence of broncho-pneumonia and hypostatic congestions, foul pus in Douglas's cul-de-sac, and fibrinous exudate everywhere in the peritoneum, while the drain tube was totally obstructed by a kink. The belly-wound was in excellent condition. The site of resection was found to be nineteen inches above the ileo-cæcal valve, while on either side of the intestinal incision circular necrosis and inflammation were well advanced.

As far as my knowledge and search go, these two cases represent the history of surgical interference with the peritoneal complications of typhoid fever. In the *Philadelphia Medical Times* of December 11, 1886, Dr. James C. Wilson, after recounting a case of recovery from peritonitis following supposed typhoid perforation, impressively asks whether operation in certain of these cases would not be justifiable, and pleads for its judgment by trial. This article called forth an approving editorial in THE MEDICAL NEWS, but since then the subject has remained dormant and received no further public attention. Whether the future will present more brilliant and encouraging results remains to be seen, certainly they can become no worse in record, and just as certainly there would seem to be chance of improvement.

The etiology of the conditions which might indicate operation appears well understood, and we have no additional modern knowledge which will, by making more clear the exact etiological factors, possibly also assist in diagnosis. For upon the latter depends *everything* concerning surgical interruption of the typhoid pathological process.

There are practically but two conditions which we could have any hope of benefiting by operation. They are, perforation of the intestine with intra-peritoneal extravasation; and rupture of a suppurating gland or other abscess into the abdominal cavity.

Now, granted that either of these conditions has been correctly diagnosed, and the patient not moribund, I should consider it imperative duty to interfere surgically. In the light of present medical science I think everyone will agree with me that the condition *diagnosis* being allowed, we should so proceed until it is proved either that operation can be of no avail, or that an occasional life, otherwise condemned, can be saved.

Diagnosis being our starting-point and foundation, what then may be our powers in that direction? First, however, a word as to the etiological factors which give rise to the conditions which we would improve. Typhoid perforations and mesenteric gland abscess occur more frequently in men than in women—almost never in children. About 1 per cent. of cases in adults perforate, and 10 per cent. of typhoid fever deaths occur from this complication. From the beginning of the third week until the end of the fifth week is the period when such complications are most apt to take place. Either of the chief complications of which we are speaking, but especially perforation, may arise at even a very long period after the subsidence of apparent symptoms, perhaps from a resultant chronic ulcer, but this latter would scarce come under the strict limits of our caption. Perforation may be the result of primary slough of a Peyer's patch early in the course of disease, but usually, and at a later stage, secondary ulceration is responsible. Completely formed ulcers have been observed as early as the seventh day. The mesenteric glands are always enlarged, frequently inflamed, and occasionally slough during the course of typhoid fever. This is the result of conveyance to them of absorbed septic matter by the intestinal lymphatics. The exact nature of this irritating substance we do not understand, nor does its constitution concern the limited scope of this article.

Suppurative peritonitis may, in the typhoid state, develop from one or more of three causes: from irritation of the peritoneum by proximatous inflammation of gland, intestine, or other organ; from the perforation of an ulcer, or from rupture of a gland or other abscess into the peritoneal cavity. The earliest sloughing and ulceration, as a rule, will be found close to the ileo-cæcal valve, and in this same region are to be found the most violent septic changes and extensive ulcerations, although, on the

other hand, it is not a fact that most perforations there occur; which may depend upon the peculiar bowel structure in that region.

Hoffmann states that the ulcerative process rarely extends more than nine and a half feet above the valve; it *can* occur, however, in any place where intestinal glands are to be found, from the upper duodenum to the lower colon, but ulceration at these extremes must be very infrequent. Perforation of the vermiform appendix from involvement of its follicles is to be remembered as a possibility, but I have no knowledge of an example.

The immediate causes of perforation are: imprudence in diet, muscular exertion, and, occasionally, the movements of entozoæ.

Liebermeister states that an apparent diphtheria of the mucous membranes—including the intestinal—occasionally follows upon recovery from typhoid fever, but regards the process more as a breaking down from malnutrition than as a true diphtheria. Perforation of intestine from violent inflammation has been known to follow this condition of its mucous membrane.

Rupture of the spleen occurs rarely, as does peritonitis also, from proximity to, or rupture of, abscesses of the same, or other abdominal organs. Gangrene of more or less intestinal wall is also an infrequent complication. Peritonitis may arise at any time from the onset of an attack of typhoid fever until an indefinite period after the establishment of convalescence. Originating before the end of the first week it cannot be caused by perforation or abscess, unless the former be due to the breaking down of an old ulcer cicatrix, etc., caused by the general devitalization of tissues. In fact, before the end of the second week, any peritonitis starting up is probably of the irritative or sympathetic type, or due to the general constitutional depreciation incident to the disease. This form is liable to come on at any time during the course of the malady in question, and must be dealt with as we would with a similar state of affairs in a non-typhoid individual; with the difference that some of the special considerations hereafter to be mentioned must be kept in mind before operative interference is undertaken. Of course, surgical treatment would always at least be considered in any case of peritonitis in these times. Sudden onset of peritonitis of violent type or with concomitant or quickly succeeding great shock or collapse, during the time limits when perforation, etc., are likely to occur, would indicate with great probability that some such accident had taken place: gradual onset and increase might be caused by either the more grave complications, or by irritative or sympathetic lesion—most probably the latter. Cases are on record where perforation has taken place, a very small amount of bowel contents escaped, the pathological orifice had been almost at once closed by fibrinous exudate, and *gradually* increasing fatal purulent peritonitis set up.

Great shock or collapse without concurrent peritonitic symptoms may indicate hemorrhage, or even the most desperate septic peritonitis from perforation. One case under my care not long since became greatly shocked, complained of a little more pain in his ileo-cæcal region than he had been having, had copious bloody stools, and died in about twelve hours. Post-mortem showed that perforation had taken place at a higher level of intestine, coincidently with hemorrhage from a separating slough lower down, and that purulent peritonitis had already started and made considerable headway. No symptoms of the latter complication were discernible during life, and I hope that the combination is, and will continue, unique; and that we shall soon possess some means by which accurately to differentiate the occasional shock of beginning peritonitis from hemorrhage. Investigations into the by no means trite subject of the symptoms of certain forms of peritonitis are most urgently needed. Within a year I saw a man die of universal purulent peritonitis from traumatic rupture of intestine, without presenting a single conventional symptom of that "inflammation."

May means be forthcoming to tell positively the presence or absence of peritonitis under all circumstances? Those who have had most experience will, I think, agree with me in being in a very anxious receptive condition for the advent of such pathognomonic signs. Upon the occurrence of perforation, patients usually become conscious, if they have not been so before; but, unfortunately, this sign holds good for hemorrhage also.

Sudden agonizing pain in the right lower abdomen, quickly increasing and extending, chill or coldness, particularly of the extremities, fall of temperature, small, rapid pulse, hurried, shallow breathing, haggard appearance, and perhaps tympany and diminished liver dulness—these symptoms strongly indicate perforation; none is positive, but the combination, in absence of hemorrhage, is *almost* so. According to Hoffmann, violent general peritonitis without perforation took place in 16 instances out of 2000 cases of typhoid fever. Liebermeister has twice observed the same conditions arise, in similar cases, from rupture of the gall-bladder, and the discharge of calculi and bile into the peritoneum. The same author also mentions cases dying of perforative peritonitis which, during life, presented no symptoms of it. Infarctions of the liver, spleen, and ovary are said, likewise, to have originated these same conditions, with and without symptoms. Rupture of the spleen, and consequent death from hemorrhage or subsequent peritonitis, has been reported more than once. A very small perforation may cause gradual onset, or limited peritonitis. Reported cases of recovery from general peritonitis, due to typhoid perforation, are most probably ones of mistaken diagnosis. Flint says that peritonitis from perforation is almost certainly fatal.

Let me quote Dr. Wilson's impressive remarks. "Granted that the chances of a successful issue are greatly against you; that the patient is in the midst or at the end of a long sickness; that his tissues are in the worst state to stand the injuries of the surgeon's knife; that the lesions of the gut may be very extensive; that the vital forces are at the lowest ebb. No one yet has hesitated to perform tracheotomy in the laryngeal complications of enteric fever, which require it to save life for these reasons. The opera-

tive treatment of purulent peritonitis has been performed many times successfully by gynecologists in conditions scarcely less unpromising. In point of fact, the objections which may be urged against laparotomy in intestinal perforation in enteric fever are no more tenable than those which would have been made use of at first against the same operation in gunshot-wounds of the abdomen. . . . The courage to perform it will come of the knowledge that the only alternative is the patient's death. Certainly *a priori* reasoning will not help us. We must not, however, overlook the fact that while a few cases of perforation occur in the second week of the disease, while the infective process has yet some time to run, a far larger proportion take place in the period of convalescence when the condition of the patient, except for deep ulceration, often single, is tending toward recovery."

If satisfied then that in certain of these cases operation is positively indicated and demanded, we should think over what course of procedure to adopt in carrying out the operation, that we may be prepared to deal with them when called upon to do so. All usual precautions taken in abdominal sections should be observed. The surroundings and atmosphere should be as cleanly as possible. The patient must be stimulated, if necessary, and extraordinary pains taken to keep him warm, such as surrounding him with hot bottles, wrapping the limbs with warm blankets, using hot solutions, and having the temperature and moisture of the apartment at just as high a point as the surgeon and his assistants can withstand—a collapsed patient can bear with benefit considerably more moist heat than can the operator.

If there is time and opportunity, a hot bath will not only cleanse the patient, but also improve his condition if he is shocked. Every unnecessary movement or manipulation of his body should be strenuously avoided before, during, and after the operation. The abdominal walls, and everything liable to come in contact with the wound, must be surgically clean, and in convenient order before the operation is begun. Median incision will undoubtedly prove best in almost every case. It should be as long as is necessary for efficient work, and commence a little more above the pubes than is usual in such incisions. Extreme gentleness will be required throughout, as otherwise, perhaps in any case, other ulcers may be broken through. Let systematic search for lesions commence at once upon gaining admission to the peritoneal cavity, starting, in order, at the points most liable to involvement. We should examine the cæcum and its appendage, then carefully go over the entire length of the small intestine continuously from its termination in the cæcum to its origin at the pylorus, by passing it between the fingers. This finished, in like manner the colon should be examined; then the mesentery, ovaries, liver, etc.

What shall be done with lesions when found? This is a vital, and not an altogether answerable question.

Perforations, in the great majority of cases, will be found in the small intestine corresponding to the position of Peyer's patches. Occasionally a follicle ulcer will perforate near the mesenteric border, but probably never so close to it as to produce the trying injuries which are made by a bullet or knife. In the cæcum, or colon, perforation is equally liable to occur anywhere, except close to the meso-colon attachments. The usual position of these lesions is fortuitous, as the situation permits of most easy reparative treatment.

Shall we resect a perforated bowel, simply turn in the borders of the perforation, or attempt the production of an artificial anus?

In the lack of experience, nothing positive can yet be said upon this point. We do know that circular gangrene of intestine occurred in the single instance where exsection has been done, but this may possibly have been due to some defect of operation. A large perforation, or a small opening through the base of a very large, deeply excavated ulcer, would probably require excision of a portion of bowel. Such an ulcer occurring in the small intestine would be in its longitudinal diameter, hence, it can be turned into the bowel entire by Lembert sutures introduced beyond its lateral borders. This I should be inclined to think the best method of dealing with most perforations, or ulcers about to perforate. The possibility of narrowing the bowel immoderately must be kept in constant view, and, where the above suggested mode of repair would undoubtedly give rise to it, resection or artificial anus must be substituted.

It is possible that the necrosis of bowel already alluded to resulted from the absence of resistance in tissues so profoundly poisoned and malnourished as, of necessity, are those of a typhoid individual. We do not even know what course the parietal incision itself would follow, but I deem it probable that, with thorough cleanliness, such wounds could be induced to heal kindly. At the worst, happen what may, the patient can be in no more deplorable condition than before operative interference was carried out. We know nothing of what possibilities there may be in this direction, and I would plead for an attempt to reduce a mortality of one hundred per cent. If resection cannot successfully be done, and the affected area is too large for efficient stitching, then artificial anus would be another resource.

Whether any one of these three methods of treatment is *the* one, or whether all will have occasional use, must be determined by trial and experience. The order in which I should suppose them valuable would be: stitching by Lembert's method, resection, and, lastly, artificial anus.

In the examination of the intestine I should also be inclined to turn into the bowel lumen, by the same method of stitching, any seats of disease which appeared likely soon to perforate, or to approach dangerously that condition. Cæcum and colon lesions could, probably in every case, be treated by simple stitching. The principles of modern abdominal and general surgery must be our guide in treating the rare abscesses of mesentery, liver, spleen, and ovaries which complicate typhoid fever. The point which I wish to reiterate is that, these having ruptured into the peritoneum, and being so diagnosed, it is our imperative duty to open the abdomen and treat what

we may find according to our knowledge, unless the future shall demonstrate that no good can ever be accomplished by surgical interference in these desperate and, at least heretofore, necessarily fatal cases.

Large irrigations with very hot distilled or medicated water are indispensable before closing the abdomen. Just as important will it be to drain these cases thoroughly, and for this purpose nothing answers so well as the leaving in of a Keith glass-drain. This tube can best be kept in working order, as suggested by Dr. Joseph Price, by carrying a rope of absorbent cotton (medicated, if preferred) to its bottom, and removing it as often as a wad of cotton placed over the outlet becomes saturated. The rope and superimposed cotton must be renewed as it becomes saturated, even as frequently perhaps as every couple of hours for the first day; afterward, at less frequent intervals, according to circumstances.

The oncoming of symptoms of a second perforation would call for a repetition of the whole process.

CÆSAREAN OPERATION,

FOR THE RELIEF OF AN OBSTRUCTION, CAUSED BY A UTERINE FIBROMA IMPACTED IN THE PELVIS.

BY THOMAS M. DRYSDALE, A.M., M.D.,
OF PHILADELPHIA.

The attention of the profession has repeatedly been called by Dr. Robert P. Harris to the unsatisfactory results of the Cæsarean section in the United States, caused mainly, as he has clearly proved, by the delay in operating, and very recently an able article by him on this subject was published in The Medical News.

This stirring appeal to improve the results of the operation in our country must meet with a hearty response, and a God-speed in the good work from every obstetrician and surgeon. In the article referred to, Dr. Harris appears to lay the blame for this delay mainly upon the medical attendants' ignorance of pelvimetry. "If our obstetricians," says he, "had as good a knowledge of pelvimetry as prevails in the maternities of Austria, France, Germany, and Italy, there would be much less delay, and fewer attempts to deliver, either by forceps or craniotomy, in cases of pelvic deformity or other forms of obstruction."

This is undoubtedly true in many instances, yet the delay is not always owing to the want of such skill, for, even when the diameters of the pelvis are known to be normal, cases occur in which eminent practitioners are in such doubt that every resource of the art is appealed to before the Cæsarean section is decided upon. Witness the case reported by Dr. Parish, at the meeting of the American Gynecological Society, in 1886, or the one published by Prof. T. Gaillard Thomas, in the *American Journal of Obstetrics* for February, 1876, p. 612. In both of these pelvimetry was not at fault, nor was skill absent, yet delivery by section was not determined upon until all other hopeful means were fruitlessly used. It is clear then that the obstetrician is not invariably to blame in such cases, for an honest difference of opinion may unhappily lead to such delay that a disastrous result is inevitable. And while in the main Dr. Harris is correct in the statement which I have quoted, yet instances will occasionally present themselves where we are foiled in our desire for an early, and therefore successful, operation by the misleading character or the obscurity of the symptoms, resulting in an erroneous diagnosis, or causing such doubts that an operation is only undertaken under protest from some of the attendants, as in the following case.

I was sent for, November 5, 1884, by Dr. Emil Fischer, to "aid him in a case of abnormal labor," and received this history. Mrs. I. P. R., a native of Germany, a small, delicate looking blonde, thirty-five years old, said she first menstruated at the age of twelve, without pain or trouble of any kind, and had always been regular both as to time and quantity until she became pregnant. The only exceptions to this were that five or six years previous she had a profuse flow, accompanied with clots, which lasted eight or nine days; and for some months before marriage she had noticed that the discharge was growing scanty.

She was married January 16, 1884, and thought she became pregnant at once, as she last menstruated from the 10th to the 14th of the month. The abdomen enlarged regularly, and the motions of the child were strong from the time of quickening until a week before the pains commenced; since then the motions had been weaker, but were still felt. For the first seven months she had constant nausea and frequent vomiting, for the relief of which she had early applied to Dr Fischer, and at the same time engaged him to attend her in her confinement, which she expected to occur in October. Ten days before my visit the uterine tumor fell lower in the abdomen, and her waist became smaller. The functions of the bowels and bladder were normal.

During the night of November 4th she was seized with strong bearing-down pains, coming at regular intervals, and accompanied with gushes of blood from the vagina, but without any escape of liquor amnii. In the absence of Dr. Fischer, Dr. Bricker was sent for, who, to arrest the bleeding, gave her fluid extract of ergot and used a tampon. Dr. Fischer saw her about 10 P.M.

With the exception of the prolonged period of gestation, which Dr. Fischer thought could be readily accounted for by an error of calculation, nothing had occurred up to this time to indicate anything abnormal in the pregnancy. Now, however, the doctor discovered, on examination, a body which appeared to be the child's head, occupying Douglas's pouch, and diagnosed extrauterine fœtation. As the hemorrhage continued at his visit, and the first tampon had escaped, he inserted another.

I saw her at 12, noon. The pain and hemorrhage had ceased about 11 o'clock the night before; she had taken nourishment and appeared comfortable and cheerful. Her pulse was 112; temperature 98½°. On examination I found that a hard mass occupied Douglas's pouch, and, in fact, the whole true pelvis. The finger came in contact with it about an inch within the vagina. It was globular

and resembled in shape and feeling a child's head, covered with a thin layer of uterine tissue. It filled the pelvis so completely that there was only room for a finger to pass between it and the pubic bone. A careful search failed to detect the cervix or os uteri. A uterine sound was passed along the vagina and entered until the handle was buried within the labia, before it met with resistance. Its point could be felt through the abdominal wall, as if just under the skin below the umbilicus. The breasts were small and soft, and although the areolæ were dark, no enlarged follicles were seen. No milk could be obtained from them.

The abdomen was occupied by a tumor of the size of a fully pregnant uterus. It was hard and resisting to pressure, and, in fact, felt like a uterine fibroid. This resemblance was strengthened by a number of small, hard tumors, some of them movable, which projected from the surface of the mass. It was impossible to find anything like the outlines of a fœtus within it. A prolonged examination failed to reveal the fœtal heart sounds, but while listening for them, I detected an occasional slight uterine contraction.

I diagnosed pregnancy, complicated by a fibroma of the uterus, developed in its posterior wall, which had been forced down and occupied the pelvis. Taking this view of the case, I proposed attempting to free the pelvis of the tumor, and, failing in this, to perform the Cæsarean section. The patient was placed in the genu-pectoral position, and a vigorous and prolonged attempt made to raise the mass, but without success.

After this, she remained free from pain, and did well until the night of November 8th, when there was a return of active labor, accompanied with some discharge of blood and dark clots from the vagina. Dr. Fischer gave her a half grain of morphia, which quieted the pains.

I saw her with Dr. Fischer November 9th, when she complained of feeling weak and of soreness over the lower part of the abdomen. She had lost her appetite, but her tongue was clean and moist; pulse 112; temperature 98°. Her bowels had moved freely, and she had frequent desire to pass water. Another and equally fruitless attempt was made to dislodge the tumor.

From this time until the operation, she had no return of expulsive pains. Her general condition remained the same. The upper part of the abdominal enlargement became softer, but the pelvic portion continued hard. She again asserted that the motion of the child could still be felt, but much fainter than it was a week before.

I operated, with the usual antiseptic precautions, except the spray, November 12th, at 11 A. M., in the presence of Drs. Parvin, W. S. Stewart, Robert P. Harris, Emil Fischer, C. R. Prall, C. E. Bricker, Frank Fisher, and my son. After a hypodermatic injection of ergotine, the patient was placed in the usual position for laparotomy, and an incision made from the umbilicus downward, about six inches in length. The uterine section was made rather shorter, commencing near the fundus and passing downward. The membranes, stained with meconium, bulged through the wound. On opening them, the child, which was large, was seen to lie with its back to the incision, and the vertex downward. Seizing its legs, it was readily extracted. The placenta occupied the fundus, from which it was detached. This was followed by a pretty free hemorrhage, which was quickly arrested by the uterine contractions. The inner surface of the uterus was of a dark green color to the depth of one-eighth of an inch, and presented a gangrenous appearance as if its vitality had been destroyed by its contact with the dead matter. It was disinfected as thoroughly as possible by sponging with a five per cent. solution of carbolic acid.

The pelvic tumor was now examined and found to spring from the posterior wall of the uterus. It still remained firmly fixed in the pelvis, from which, after some difficulty, it was dislodged by drawing on it from above while it was forcibly pressed upward through the vagina.

Wishing to ascertain the condition of the os, a uterine sound was passed; no opening of it had occurred and a short cervix still existed. Before closing the wound in the uterus the cervical canal was dilated and a drainage tube passed through it into the vagina.

When the uterus was emptied, arterial blood was seen to be flowing freely from the upper angle of the wound near its peritoneal coating, over the site of the placental attachment. On attempting to secure the vessels the uterine tissue proved to be so soft and friable that the ligatures cut through it, leaving a bleeding surface. As the vessels could not be ligated, they were secured by bringing the edges of the wound together by a silk suture, passed under them through the entire thickness of the uterine wall, which at once arrested the bleeding. Ten other deep sutures were introduced in the same way and the wound in the uterus closed. Ten fine sutures were then used between these to secure the peritoneal coat; these were made in such a way as to turn in and bring the peritoneal surfaces in apposition. The external wound was closed with silk sutures, a compress and bandage applied, and the patient put in bed. She soon came from under the anæsthetic, made no complaint and presented no evidence of shock. The pulse was 98 and of good character.

She did well until 5 P. M., when she complained of soreness in the lower part of the abdomen and severe after-pains, for which I ordered an injection of half a drachm of denarcotized tincture of opium, to be given every hour. Her pulse was 96, temperature 100°: 10 P. M., pulse 112; axillary temperature 100°, in vagina 102°. She was sweating so profusely that her pillow and clothes were wet. As she still suffered from the intermittent uterine pains, I ordered a quarter of a grain of sulphate of morphia in half an ounce of camphor water, to be given every half hour until she was relieved. Soon after my visit she vomited, and continued to do so until 4 A. M., when Dr. Bricker was sent for, who, finding her pain unrelieved, gave her a hypodermatic injection of half a grain of sulphate of morphia. Nov. 13, 10½ A. M., her pulse was 140 and weak; temperature 105; breathing irregular and gasping; surface decidedly cyanosed. Ordered ten grains of

quinine and an ounce of whiskey by injection, and again washed out the uterus with carbolized water.

She continued to sink and died at 1.50 P. M. At the autopsy, made the next day, the uterus was found firmly contracted, and already the peritoneal lips of the wound in it were adherent, but the muscular wall showed no signs of healing and was thickened by fibroid degeneration. Its cavity contained some dark blood. The tumor was seen to originate by a broad base involving the cervix and about one-half of the posterior wall of the uterus. Its surface was mottled, but presented no signs of inflammation. The entire peritoneum was healthy, except on the anterior portion of the uterus, which was adherent to the abdominal wall for the space of an inch on each side of the incision in this organ. Douglas's pouch contained about two ounces of bloody serum.

Her death was undoubtedly owing to septicæmia, as there was no evidence of peritonitis beyond that already described. The septic poisoning probably occurred by the uterine contraction forcing the dead matter from the interior of the uterus between the edges of the wound where it could be readily absorbed by the freshly cut surface, or even enter the uterine sinuses.

This case is chiefly remarkable for the difficulties it presented in arriving at a correct diagnosis, which can be best appreciated by a brief review of its main features. After marriage, the patient, who had menstruated regularly, ceased to do so: morning sickness occurred and proved obstinate; the abdomen enlarged regularly; the fœtal movements were asserted to be active, and at the end of the tenth month she was seized with the usual signs of labor.

The history and symptoms, so far, then, were clearly those of pregnancy, although the duration was unusual, but this Dr. Fischer thought might be owing to an error of calculation. As nothing unusual in the condition of the patient had presented itself, the doctor had made no examination until the pains commenced and the patient supposed herself to be in labor. Then the pelvis was found to be occupied by a mass in Douglas's pouch, which he believed to be the head of the child, and so diagnosed extrauterine pregnancy and sent for me. Up to this time no doubt had been felt as to the fact of pregnancy, but further examination showed the breasts undeveloped and the areolæ unchanged, and *although the mother asserted that the fœtal movements could still be felt* none could be detected, while prolonged auscultation failed to reveal the sound of the fœtal heart. The abdomen was occupied by a solid tumor of the usual size of a pregnant uterus at full term, but conveying to the touch the sensation of a solid body like a uterine fibroid, in whose surface could be perceived imbedded several small movable tumors, but nothing resembling any part of a child could be detected. The mass in the pelvis so thoroughly filled it that only a finger could be passed with difficulty between it and the pubic bone. The finger thus inserted could detect no portion of the uterus or child within reach, while a uterine sound measuring eleven and a half inches was introduced until its handle was buried within the vulva, when its end could be felt as if just under the skin below the umbilicus. It will be seen, then, that the child was in a thoroughly inaccessible position. It could not be reached from below, neither could its form be made out through the uterine walls above, owing to the broad, smooth back of the child and the placenta being closely applied to them. There was, therefore, no opportunity of verifying the diagnosis by the usual methods.

The pelvic tumor was hard, and closely resembled the head of a child, the deep sulci in it simulating the sutures. So deceptive was it to the touch that two obstetricians of large experience believed it to be a child's head in a retroverted, pregnant uterus. To add to the obscurity of the case, the pains which occurred the night of November 5th left her until the 8th, when they yielded readily to morphia, and never returned.

There were no constitutional symptoms present, except a rapid pulse, for which the loss of blood would account. Apart then from the history of the case, which was not entirely reliable, and the absence of menstruation, there was absolutely nothing to distinguish it from a rapidly growing, uterine myoma, except the intermittent uterine contractions. It is evident that such a condition of things is rarely met with, as I can find no similar case on record. This one, therefore, differs in that respect from any others reported, for in them a correct diagnosis could be made at once, as the uterus was within reach, and, in most of the cases, the presenting part of the child could be felt.

MEDICAL PROGRESS.

Laryngeal Phthisis and its Connection with the Tubercle Bacillus.—Korkünoff reports his results from his study of this subject as follows: His material consisted of fourteen larynxes taken from cases of pulmonary, peritoneal, and general miliary tuberculosis. In twelve of these laryngeal phthisis was also present, while the remaining two did not present any structural changes either to the naked eye or microscopically. The specimens were hardened in alcohol, and then placed in paraffin, the slides being treated after the Koch-Ehrlich plan. Dr. Korkünoff's results may be summed up as follows: 1. In the twelve phthisical specimens tubercle bacilli were found in the tissues. They were absent in the tissues of the remaining two, in which there was no laryngeal disease, though the secretion collected in the ventricles contained numerous Koch's rods. 2. The number of the latter varied, but bore no relation whatever to the extent and intensity of the morbid process—that is to say, they were often very scanty in number in an extensive tuberculous mass, and *vice versâ*. Further, in some cases he was unable to detect any bacilli within or around an ulcerated region, while he found them in some recent tubercular formations in the same larynx. This shows the importance of examining in each case as many sections as possible taken from different situations. 3. So far as histological changes are concerned, the tuberculous ulcer of the larynx originates in the following way. Mostly in the subepithelial layer, but not infrequently in some deeper

one, one or more tubercles, each of which is often enclosed in a connective tissue capsule, make their appearance, the epithelial covering and intermediate layer remaining yet intact. The tubercles contain Koch's bacilli, which are also seen in the surrounding infiltrated tissue, but never in the epithelium or the still healthy intermediate layer. The latter, with the gradual increase of lacteolar infiltration, becomes ever narrower, and ultimately disappears, so that the new growth comes into close contact with the epithelium. At this stage copious infiltration of the epithelial covering with leucocytes invariably takes place, and spaces become apparent between its cells, which are filled with white blood-corpuscles and tubercle rods. These spaces are nothing else than lymph spaces, which are also present in normal epithelium, but which may become dilated under morbid conditions. The nutrition of the epithelial covering now fails, its superficial strata become fissured, the infiltration with leucocytes increases, the lymph spaces grow larger, and finally the diseased portion separates, leaving a denuded or ulcerated surface. The ulcer continues to spread in the same way, that is, by infiltration with leucocytes, formation of spaces, sloughing, etc. Its parts covered with cylindrical epithelium, which is comparatively softer, the process goes on more rapidly than in those covered with the flat variety; consequently the tuberculous ulcers are deep in the former situation, and superficial in the latter, as Biefel had already pointed out. 4. The primary cause of the process is tubercle bacillus. Having appeared in the subepithelial tissue, the microbes, by their presence and multiplication, give rise to all the changes described above. 5. The microbes enter into the subepithelial tissue from the patient's expectoration, but from his own vessels or lymphatics, which carry them thither from primary tuberculous foci. No bacilli are met with in the epithelium of the intact larynx in a phthisical patient, though that epithelium is in constant contact with the expectoration containing tubercle bacilli. Again, no bacilli are found in a still intact epithelial covering, when tubercles, together with bacilli, are present in the subepithelial stratum. Microbes appear in the epithelium only at places where a tubercle with bacilli in its immediate contact with the epithelium, and ulcerates, or may be in greatest numbers in the deeper layers of the epithelium, and become more and more scanty as the surface is approached. Lastly, Koch's microbes have no enzymic or fermentative action."—*British Medical Journal*, November 5, 1887.

LUMINOUS CATARACT.—LAWFORD, of St. Thomas' Hospital, reports on the following case: "On October 1887, I was asked to see a patient, after excision, was presented to me in Mulleg's shed, for a month, and the ground in the usual manner, and examined. As regards the posterior parts of the eye, it will suffice to say that there was some hemorrhage in the vitreous, and between the choroid and sclerotic, and in the retina at the yellow spot. The lens was very slightly displaced, to a much less degree than appeared possible before removal of the eyeball. It was, however, dislocated slightly upwards, and more a little backward, at its upper edge. The pupil had a free way at this point, and the vitreous was bulging forward between the ciliary processes and the lens margin. The rupture of the iris was in this situation also. The lens was less uniformly opaque when seen from behind than it appeared to be anteriorly. Its circumference was rendered irregular by a slight prominence at the upper edge. Its posterior surface showed some unevenness, the middle part being raised a little above the lateral parts, and nearly in the centre of the posterior capsule was a small vertical gap, with a protrusion of semi-opaque lens substance through it. There was no other breach in the capsule. The whole lens was imbedded in celloidin, and sections were made transversely so as to cut across the rupture in the capsule. On microscopic examination of the sections, the rent in the posterior capsule was very well seen; it was a little to one side of the midline of the posterior surface of the lens, and the capsule on one side (probably the temporal) of the gap was curled outward upon itself, with two nearly complete turns, in an exactly similar way to that which occurs when the anterior capsule of a fresh lens is opened. At the opposite edge of the rent no such curling had occurred. The capsule elsewhere was intact. The changes in the lens substance were most noticeable in the posterior cortical layers. Here the fibres had undergone considerable change, and there were numerous globular particles among them. In the part immediately adjoining the rupture nothing but irregularly globular (or nearly globular) masses, quite structureless in appearance, could be made out, the small notch in the lens being almost filled by them. Anteriorly, there were numerous small bubbles or vacuoles among the lens fibres, which were evidently loosened and separated to a moderate extent. The nuclear part of the lens presented an almost homogeneous appearance, the outline of the fibres being completely lost. The anterior subcapsular epithelium was unaltered.

DIPHTHERITIC CONJUNCTIVITIS.—COUTANCES, of Paris, writes as follows in a recent thesis on this subject: Diphtheria may manifest itself locally on the conjunctiva just as on other mucous membranes. Diphtheritic ophthalmia may be met with at all ages; every cause leading to debility, and especially hereditary syphilis, predisposes to it. Cold may be regarded as an adjuvant cause, but the ocular affection declares itself especially when the conjunctiva is previously unhealthy, the pathogenic microbe having an action only upon an injured mucous membrane. Diphtheritic conjunctivitis differs essentially from purulent ophthalmia by its general symptoms and also from conjunctival croup. The malignancy of the affection varies much according as the ocular affection is an isolated case, or occurs epidemically.—*Journal of Laryngology*, November, 1887.

PARASITIC INFECTION FROM DOGS.—DR. OLLIVIER, of Paris, is quoted as follows on this subject by the *British Medical Journal* of November 5, 1887:

The number of hydatid cysts in a country is in direct proportion to the number of dogs. Facts seem to confirm this theory, for they show that there are more hydatid cysts in hill districts than in the low lands, in the country than in towns. The author cites several cases observed by him, in which the cyst was plainly traceable to previous intercourse with dogs, in patients

fond of these animals. A long period, sometimes years, may elapse before the ecchinococcus develops itself, but the cause is none the less evident. Children are always fond of dogs, and like to play with them, and these pets are affectionate and caressing, and have a bad habit of licking; in this way the animal's tongue may prove a ready means of propagation of the eggs of tænia. It is also possible that they may be inhaled, when, in very dry weather, these eggs are carried about by the wind. This would explain certain cysts in the respiratory organs. The penetration into the human organism, however, generally takes place through the digestive organs by means of salads, green vegetables, fruit, and other aliments imperfectly cleaned; or by water from ponds, reservoirs, or wells contaminated by dogs resorting there to drink. The author points out the precautions which should be taken to diminish the danger of propagation of this parasite: greater care in the choice and cleanliness in the preparation of certain articles of food; avoidance of unfiltered water, and particularly of stagnant water of any kind; and, above all, less intimacy with dogs, particularly in the case of children, who should be carefully watched. He condemns altogether house dogs of all kinds, as being a source of continual danger as regards the propagation of the eggs of *tænia echinococcus*.

Nasal Tuberculosis.—Cartaz believes that though the nasal mucosa cannot escape this condition, it is rare, if one puts on one side lupoid affections, as to which great diversity of opinion exists. Cartaz has been able to find only eighteen cases of this disease, of which one came under his own observation. Nasal tuberculosis occurs under two forms, one consisting of ulceration, the other neoplastic. Ulceration, which is usually unilateral, is situated on the septum, a little distant from the nasal meatus. The ulcer has a diameter of about half an inch, and a form more or less rounded. The base is pale reddish gray, and covered with muco-pus; caseous masses are seen embedded on certain anfractuosities of the ulcer, or fine gray granulations are seen in relief. The edges of the ulcer are sometimes projecting, sometimes forming, sometimes a light gray ring, sometimes sharply cut and toothed with small excavations. There is little pain, or interference with nasal respiration.

In the second form there is usually a tumor, and coincident coryza, interference with respiration, and the diagnosis will be uncertain unless pulmonary signs are present. Cartaz recommends galvanocaustic applications, lactic acid, and iodoform.—*Journal of Laryngology*, November, 1887.

The Question of Operation for Peritonitis.—At a discussion of this subject before a recent meeting of the Clinical Society of London, Mr. Treves expressed his views as follows: He said that other inflamed serous cavities, such as the pleura and the joints, are amenable to extensive surgical interference, and the same general principles of treatment are now being applied to the largest serous sac of the body. Already Truc had collected a series of ninety-seven cases of deliberate surgical interference with the peritoneum, and this numerical statement alone sufficed to show the rapidity with which this treatment had spread. As to the claim of priority of the deliberate treatment of peritonitis by washing out the sac, he could only say that he did not gather from a rather verbose correspondence with Mr. Lawson Tait that that gentleman was the first who deliberately performed the operation of abdominal section for the purpose of healing a case of supposed simple peritonitis. The operation had been done in previous cases as the consequence of a mistaken diagnosis, as in Sir Spencer Wells' historical case of tubercular peritonitis. Then, again, Mr. Luke Hancock's writings show that his conception of the treatment of peritonitis was a utopian idea. Just as the poetical outburst of Addison foretold the origin of the telephone, so in an excess of surgical exuberance Hancock had predicted this mode of treatment of the peritoneum. In Mr. Barwell's case six days had elapsed before surgical interference. As a rule, such a time would have seen the termination of the career of many cases of acute peritonitis. Moreover, in Mr. Barweel's case but a small part of the peritoneum appeared to have been diseased. The necessity of thorough washing out is made evident by the reflection that the peritoneum is so large a cavity with so many recesses in which fluid might accumulate. He hoped Mr. Barwell would amend his views as to the use of the drainage tube, for if ever there be a case for the use of the drainage tube, surely it is when the peritoneum is the seat of suppurative peritonitis. The principle that underlays the practice is perfect cleanliness. And in some cases he would wash out the stomach if the vomits had been offensive. Next, as to tubercular peritonitis. Kümmell, at the recent Congress of German Surgeons, had collected thirty cases of this disease treated by laparotomy, and others who discussed the paper added six more. Of the whole number, six cases ended fatally; twenty-five recovered of the first series of thirty, and only one died of the second series of six. In many cases the operation was done practically by accident on the mistaken diagnosis, as in Dr. L. Knagg's case of encysted peritonitis. Most of the cases occurred in others than young children, and between the ages of fifteen and twenty. It seemed that it was a matter of perfect indifference how the peritoneum was treated so long as it was opened. In young children the treatment was not encouraging. Reference was made to a case of his own in a child fourteen months old; there was so much ascites that the child was almost suffocated by the attendant dyspnœa. At the operation of section peritoneal tubercles were seen. It appeared that the treatment tended to alter the character of the inflammation, and for a time this case did well; but the fatal termination was only averted. Some improvement followed the injection of one pint of a solution of two drachms of tincture of iodine in hot water, at a temperature of 100° F., and for three weeks the child seemed better. At the necropsy general miliary tuberculosis was found. The influence of the ascitic fluid on the growth and nature of tuberculosis was discussed.—*Lancet*, November 5, 1887.

Diphtheria in a Prison.—Kionig, of Christiania, is quoted by the *Journal of Laryngology* for November, 1887, as reporting the following case:

A prisoner, aged twenty, who had been a year and a half in prison, was attacked with diphtheria of the fauces. After the patient had begun to recover, serious paretic

symptoms of the throat and gullet supervened, paresis of accommodation and later on, palsies of the muscles of the neck and arms, with subsequent atrophy of the muscles and extreme emaciation. He recovered, however, at last. There was no other case of diphtheria in the prison, and the only probable explanation of the way in which the contagion had reached the patient was that the prisoner had worked in a shed where a man from outside, whose child suffered from diphtheria, had previously been.

INTERNATIONAL LEGISLATION FOR THE PREVENTION OF EPIDEMICS.—At the Vienna Congress for Hygiene Professor von Pettenkofer said that as long as the etiology of cholera was not thoroughly known, the practical conclusions at which they might arrive would not be accepted as having much weight. All measures which restricted intercourse and interfered with commerce, and quarantine of all kinds, were worthless. The proposed practical prophylactic measures, such as disinfection and isolation, could prevent the spread of cholera just as little as the omission of them would propagate it. This was proved in Bavaria, in 1836, when no measures whatever were taken to stop the spread of the epidemic, and the course of the disease was, nevertheless, milder than ever before. After once more citing the example of England, Professor Pettenkofer expressed a hope that the system of quarantine would be altogether abandoned.

Dr. Angelo di Mosso, of Turin, stated that the preventive measures which had been taken in Italy, in 1884 (cordons, quarantine, isolation) had completely failed to check the disease, whilst causing much inconvenience and suffering to the country, whereas the present epidemic, though, in accordance with the order of the Minister, Signor Crispi, no such precautions had been taken, had run a much milder course, and had already nearly died out.

Dr. Stekoulis, of Constantinople, and Professor Conradi, of Bologna, also spoke against the utility of quarantine, the former particularly condemning the blockade of the Suez Canal.

A resolution as to the proposed international legislation for the prevention of epidemics, which had been drawn up by the reporters, Drs. Sonderegger, Vallin, Murphy, and Finkelsburg, was then read. It was in the following terms: The Third Section of the Congress expresses the desire that an international convention should be arranged between the different States for their common protection against cholera, yellow fever, plague, etc., the said convention to be based on the following principles: 1. Compulsory notification of each case of the above-mentioned diseases to be made without delay. 2. In a neutral European State an office should be established which should be a centre of information to which the first cases of epidemics, and regular accounts as to their course, should be forwarded by telegraph; these accounts should then be transmitted by the office to all the States which participated in the convention. 3. The convention should lay down rules for the proper sanitation of seaports and centres of commerce, etc. 4. The States taking part in the convention should take all necessary steps to prevent the shipping of persons or goods from localities in which any of the above-specified diseases were prevalent. 5. Vessels arriving from infected places should be so arranged that the patients could be isolated on board, and the necessary disinfection performed. 6. Ships coming from infected places should be submitted to a medical examination at the port where they arrive. 7. When cases of cholera had occurred on board the ship, the patients should be disembarked and isolated, and those who were suspected should be kept under observation until the true nature of the disease was established. 8. The ship should be kept under observation until disinfection had been duly carried out and it was certain that no epidemic was to be met with on board the ship. 9. At the ports of the Suez Canal an international board of medical supervision should be established, and the officials should be appointed by the Sanitary Council of Alexandria. This proposition was, after some discussion, carried by a large majority.

A proposal brought forward by MM. Ruysch, Brouardel, and Silva, that the Austrian Government should be asked to call the Sanitary Conference of Rome once more into existence, or to summon such a Conference at Vienna or elsewhere, was also accepted.—*British Medical Journal*, November 5, 1887.

POSTURE IN SLEEP.—The *Lancet* of November 5, 1887, writes as follows on this subject:

It would seem on the first blush of the matter that the posture for—that is, to favor—sleep must be generally the same as that voluntarily or instinctively assumed during sleep; but a little consideration will make it apparent that this is not correct. It may be granted that, supposing a person to be sleeping lightly and uncomfortably, the posture will be changed half-consciously to one of comfort. It would be more correct to say that it is changed in the endeavor to avoid distress or discomfort; but even the fact that sleep is quieter in the new position, will not suffice to prove that this is a better one, because the sleep may meanwhile have become deeper. It is, on the whole, impossible to ascertain, either by experience or observation, which is the posture most conducive to sleep, and attempts to lay down rules for the guidance of bad sleepers are always arbitrary, generally empirical, and rarely of any practical value. Those who think "anæmia of the cerebrum" is the cause of sleep, and those who think that, though not the cause, a diminution in the quantity of blood in the vessels of the encephalon is a necessary concomitant of sleep, prefer, and recommend, that the head should be higher than the feet; while those who adopt the opposite view, and think passive congestion causes or promotes somnolence, would have the feet raised and the head lowered. The confounding of stupor with sleep may, and probably has, something to do with these differences of opinion. Meanwhile, a common-sense view of the subject would conclude that, as there is evidently some change in the blood-state when the brain falls asleep, the best plan must seem to be to place the body in such position that the flow of blood through the vessels of the head and neck may be especially easy and free. The way to secure this, is to allow the head to lie in a posture and on a level that cannot offer any obstacle to the free return of blood through the veins of the neck, and does not tend to make the blood flow specially in any particular direction, but leaves Nature at liberty to act as she will.

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SATURDAY, NOVEMBER 26, 1887.

THE CONTAGION OF SCARLET FEVER.

ONE of the most important questions now before the profession is that of the nature and properties of the contagious principle of scarlet fever. In common with all the eruptive fevers, it has long been supposed that the exciting cause of this disease would be found in a microörganism; and, indeed, in its mode of onset, course, and decline, it produces in an impressive degree all the characteristics of a disease caused by the invasion of organized beings and their subsequent development.

Although numerous scattered attempts to discover the supposed germ have been made during the last few years, they have been so imperfectly and faultily carried out that they attracted little or no attention. Recently, on account of the epidemic proportions assumed by the disease in England, the subject has acquired new prominence, and, as a result, a number of investigations have been recently made, the most important of which are those of JAMIESON and EDINGTON, and KLEIN, and a study of their work is valuable in showing what must be done by future investigators to settle definitely the subject.

Dr. Klein's researches were directed mainly to a disease among cows in a certain dairy, the milk of which was supposed to have caused an epidemic of scarlet fever. His conclusions were justly criticised, and it has been shown that the cows in question did not have scarlet fever, while the real cause of the human disease seems to have been found elsewhere, as shown by THIN, in the *Brit. Med. Journ.* of August 20, 1887. Edington studied the bacteriological side of the disease in the human being, and found in a number of cases several forms of microbes. One of these, provisionally named by him *bacillus scarlatinæ*, was found in the blood in all cases examined before the third day, and in the desquamation of all after the thirtieth. The deductions from the latter statement are difficult to reconcile with our present knowledge. Edington's report has been made the subject of inquiry by a special committee of the Edinburgh Medico-Chirurgical Society, the final report of which has not yet been issued. We can, however, from the facts already in our possession, point out certain things which must be thoroughly explained before any real advance can be made.

First, in regard to scarlet fever in the lower animals, especially calves. It has long been believed that cows, horses, and some other domestic animals, under favorable circumstances, could acquire a disease identical with human scarlatina. This has been flatly contradicted by intelligent men of large experience in stock-raising, and by physicians, and this negative testimony has been strengthened by the experiments of the Edinburgh committee, which obtained negative results in two inoculation experiments with scarlatinous blood, and one attempt at feeding the desquamated scales in calves. If this be so, and applies to all available animals, the difficulty of proving any specific cause in man will be greatly increased.

In regard to Edington's bacillus, it is evident that his observations were too few in number to permit of generalization even if his investigation had more intrinsic merit, for its precise nature is not yet known, and it has been asserted to be nothing more than a non-pathogenic organism. To make out the causal connection, the organism must be found in all of a large number of cases, by different observers in different localities. It must be shown to be present in the blood, or tissues, or both, of the affected persons in one or all stages. It must not be a commonly occurring parasite or saprophyte which has gained access to the body in an early stage. According to the strict rules laid down by Koch, the organism would have to be cultivated pure, and the pure cultures possess the power of reproducing the disease in men or animals susceptible to it.

These are the lines that must be followed to discover the cause. Whether Edington's investigations and those of the Committee will achieve this, the near future will tell. With the earnest work the subject is now receiving, it is fair to hope the desired information will not be long delayed.

The question of contagion associates itself narrowly with attempts made to discover the cause of the disease by examinations of the desquamation. Any results based on these must be received with great caution. Before any scientific work can be done in that direction, an immense amount of research must be accomplished with the organisms of the healthy skin. As

a result of his investigations, Jamieson recommends the use of baths and antiseptic ointments to prevent contagion. In the absence of any more positive knowledge of the nature of the contagion and the duration of its activity, these precautions may well be followed, and all the more since they were indicated by experience and observation in days when the contagion was supposed to be of a much more impalpable nature than at present. Jamieson advises the use of an ointment of carbolic acid in the proportion of one to thirty-two, as the result of culture experiments with the bacillus scarlatinæ, and continues its use until the thirtieth day of the disease, a period which might be lengthened with advantage to patient and all others exposed.

PTOMAINES AND SUPPURATION.

Some observations of Grawitz, in the October number of Virchow's *Archiv*, if confirmed, will add a great deal to our knowledge of suppuration. From some earlier experiments Grawitz was led to believe that in subcutaneous inflammations in which bacteria were actively concerned, suppuration was caused, not by the bacteria directly, but by chemical products—ptomaines—resulting from the metabolic activity of the bacteria. According to him, therefore, the rule would hold good that, aside from artificial phlegmons caused by the injection of ammonia or turpentine, in abscess of the subcutaneous fatty tissue, the tissues are first prepared, as it were, by the chemical products of the so-called pyogenic bacteria (staphylococcus pyogenes aureus, albus, streptococcus), and then the bacteria multiply and carry the process further by the formation of new alkaloids.

Experiments have shown that many organisms not usually considered pyogenic—e. g., micrococcus prodigiosus—furnish chemical products capable of exciting inflammation and suppuration; but as these substances have not yet been thoroughly studied, it is better to begin research in the new field with those ptomaines which have already been isolated. For this reason Grawitz used in the experiments now under consideration *cadaverine*, a non-poisonous alkaloid discovered by Brieger as the result of putrefaction in various substances from different causes, and the morbific effects of which had not previously been accurately studied. This alkaloid occurs as a colorless liquid, soluble in water, and in dilution of one per cent. has a strong alkaline reaction. The pure alkaloid contains no bacteria, so that dilutions with sterilized water are easily prepared. A 2.5 per cent. solution kills staphylococcus aureus in an hour, while extremely small amounts retard or check the growth of these bacteria. All cadaverine producers, therefore, may be considered as antagonistic to the pyogenic cocci in the sense of Garré, though practically this fact has not the value the latter observer seems to impute to it, for Grawitz's experiments show that cadaverine is itself pyogenic. By the subcutaneous injection of solutions of cadaverine which were free from germs the result was, according to amount and concentration, either escharotic action or inflammation followed by suppuration or inflammatory œdema, with subsequent absorption and simple healing.

For the details we must refer the reader to the original paper. The experiment, which is quoted at length, seems to prove beyond doubt that the alkaloid caused suppuration without the presence of bacteria. Most of the cases are without bearing on the question, as necrosis of the skin came on so soon that bacteria were able to penetrate it. In some cases the bacteria—large bacilli—were found in large numbers. They could not be successfully cultivated in agar-agar. That they were not the cause of the suppuration is evident from the fact that pus containing them injected into dogs was absorbed without any evil consequence, and when the cadaverine had exerted its greatest escharotic effect no suppuration followed, though then the bacilli could enter with least difficulty. That the bacilli or their spores were introduced at the time of injection is rendered improbable by the fact that weak solutions were absorbed both in dogs and rabbits. The effect was, therefore, as stated above, in proportion to the quantity and concentration of the alkaloid. Injections of mixtures of staphylococcus aureus and cadaverine were absorbed when the dilution was carried far enough, while strong solutions killed the microbes before the inflammatory exudation could cause a further dilution. In the resulting abscesses only the bacilli spoken of above were found, and no culture of the yellow coccus could be made.

In one group of cases injection of cadaverine with staphylococcus aureus caused phlegmon in the surrounding tissue beside the necrosis of the skin, and in the pus of the phlegmon were found the staphylococcus and various other bacteria. It follows that cadaverine can cause purulent inflammation, and when pyogenic microbes are present they can still further promote the suppurative action.

It is of great practical importance, as shown by Grawitz, that cadaverine, a common result of putrefaction, when introduced into the tissues can cause inflammation and suppuration. For it proves that the old views, according to which putrefaction of wound secretions caused pyæmic disease, are still valid. These observations, by so competent an investigator as Grawitz, deserve careful study and repetition. As said before, they have an important bearing on the subject of suppuration. That they will alter the well-grounded belief that in nature all suppurations are caused by bacteria—in other words, "with-

out microbes no suppuration"—is not probable. It is quite evident there are a number of microörganisms beside the few with the specific name "pyogenic" that in some way or other cause suppuration, and as the putrefactive alkaloids are the results of bacterial action, it is only making another step in the process and not altering the conditions, to unite the alkaloid directly with the suppuration.

Although in these experiments no general effect on the animals used could be made out, we have no doubt that further research with the putrefactive alkaloids will lead to an immense increase of our knowledge of infectious diseases in the narrower sense.

A novel experiment in medical teaching is to be tried at the University this coming week. All medical men have felt the great need of practical instruction in what may be called "Medical Dietetics," the lack of which has often sorely tried the young practitioner when asked by his patients such questions as how to make beef tea, wine whey, and the various delicate foods so needed by the sick. As a matter of fact, how can one give directions unless some previous training has made him competent to do so?

Dr. George Strawbridge, assisted by Miss Davis, proposes to give a course of illustrated lectures on every Wednesday afternoon to cover this ground.

The first lecture will be next Wednesday, at 4.30 P.M., at the University Hospital. *The preparation of milk foods* will be the subject, and the lecture will be illustrated by practical demonstrations.

The second lecture, on the following Wednesday, will be on the *preparation of beef tea, broths, etc.*, the *proper method of cooking meats, vegetables, etc.*; and like subjects will be taken up in order.

The course is open to the medical profession without fee.

The patient upon whom Prof. John G. Jay, of Baltimore, performed the Sänger-Cæsarean section four weeks ago, has now recovered, so far as the operation is concerned. There has been but little rise of temperature during the course of the case, and, it might be said, no unfavorable symptom. The secret of success is early operation, close suturing of the uterine wound, and surgical cleanliness. We are informed that six operations, with four recoveries, have been performed in this country during this year.

At the meeting of the Berlin Medical Society on October 12, 1887, a communication from Secretary-General Hamilton was read, announcing to the Society the choice of Berlin as the meeting place for the next International Medical Congress.

Professor Virchow, president of the Society, read the communication, which had been also sent to von Bergmann and Waldeyer.

Professor von Bergmann succeeds von Langenbeck as editor-in-chief of the *Archiv für klinische Chirurgie*.

The Death of Dr. Robert Greenhalgh, formerly accoucheur and lecturer to St. Bartholomew's Hospital, is announced. Twenty years ago he performed a successful Cæsarean section for epithelioma of the cervix, and he was one of the earliest advocates of measures of surgical treatment in contracted pelvis, now acknowledged to be correct.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, November 3, 1887.

The President, T. M. Drysdale, M.D., in the Chair.

CATHETERIZATION OF THE URETERS.

Dr. B. C. Hirst said that, after seeing the urethral catheters that were shown by Dr. Kelly at the last meeting of the Society, and hearing his commendation of them, a case came under his observation in the Maternity Hospital which seemed eminently suitable for the application of these instruments as an aid in arriving at a correct diagnosis. The clinical history of the case is briefly as follow: A young primagravida was found to have both pus and albumen in her urine, which condition persisted after delivery. The case was treated as one of cystitis, by vesical injections, but without much benefit. Some three weeks after delivery, the quantity of urine excreted in twenty-four hours became decidedly lessened, while the amount of pus became both actually and relatively much decreased. At the same time the temperature rose to 104°, and there was considerable pain over the region of the right kidney. This history would, of course, have led one to suspect "lithogenic pyelitis," resulting in the formation of a stone in the pelvis of the right kidney, which had suddenly plugged up the outlet from the kidney and has thus diminished the quantity of urine and decreased the amount of pus. Answers to the following questions were desirable: 1. Was the *right kidney* chiefly affected, or was the pain on the right side referable to a morbid condition of the left kidney? a possibility to which attention has been called, especially by Knowlsley Thornton. 2. Were both kidneys diseased, or was one healthy? 3. Did the pus really come from the kidneys, or was it confined to the bladder? He was able to solve these problems by the use of the ureteral catheters. The ureters were made out without difficulty by abdominal palpation, and then the catheters, first the metal and then the flexible, were introduced with ease, the flexible catheter being pushed up the right ureter a distance of eight and a half inches. The specimens of urine collected in separate test tubes from each kidney, showed, on inspection, a much greater turbidity in that from the right than in that from the left kidney. A microscopic examination

revealed pus in both specimens, but in that from the right side in much larger amounts than in the specimen from the left kidney. In the urine from the left side a well-defined granular cast was found. He could say, then, 1. That the pus came from the kidneys. 2. That both kidneys are diseased, but the right is most markedly affected. 3. That there is not only pyelitis, but pyelonephritis in the left kidney; arriving thus at a precision in diagnosis that would be impossible without the use of the ureteral catheter.

Dr. Hamill had, since the last meeting, palpated the ureters without difficulty, and had passed the catheter into them. The ureters were about the size of the little finger.

Dr. Kelly has, since the last meeting, operated successfully for the relief of a ureteritis in an unmarried young woman; the pelvic organs were healthy. The inflammation was confined to the orifices of the ureters. He experienced no difficulty in passing the catheters.

Dr. Philip M. Schiedt read a paper on

THE DELIVERY OF THE AFTER-COMING HEAD.

"Time is the great factor in these cases. It is generally conceded that if the head is not delivered in from five to eight minutes after the delivery of the body, the child will be stillborn." Dr. Schiedt took up the history of the literature of the subject from the time of Celsus, and the method of "expression" by suprapubic pressure, down through the various manual methods. He deprecated the neglect of this subject by American and English authors, and entered very fully into a criticism of the methods advocated by German and French writers. His own deduction from an analysis and comparison of these authorities, who widely differ in their teachings, and from his own experience, is that the forceps constitute "the best, quickest, and safest treatment."

Dr. William Goodell had been struck by what seemed to him a great, although common mistake, trying to secure flexion of the head in breech deliveries. In a flattened pelvis it is better for the head to descend in a transverse position, so as to enable its shortest diameter, the bitemporal, to correspond to the short diameter of the pelvis, the antero-posterior. In a juxtominor pelvis the operator would be justified in trying to secure flexion. The fingers in the fœtal mouth are useless for good, and there is danger of breaking the jaw. The forceps is the only proper aid in the expulsion of the after-coming head. One objection often made to their use is the loss of time involved in their application, but this does not hold. The accoucheur should be acquainted with the form of the patient's pelvis. The body of the child should be held away, so that the forceps can be applied to the sides of the head, the handles being on the anterior aspect of the child's body. Another point to bear in mind in a flattened pelvis, is the problem of bringing the head safely around the promontory of the sacrum. The hand should grasp the neck of the child, the thumb being on one side and the fingers on the other, and traction should be made so as to ease the head around the promontory base, securing rotation of the face into the hollow of the sacrum. After this it would be easy to make the chin engage or to apply the forceps.

Dr. Longaker laid great stress upon the necessity of avoiding mismanagement in the early stages of a breech delivery; there should be no immediate haste. If the legs are seized and drawn down upon, the body is quickly delivered without securing dilatation of the os uteri and the arms become extended beside the head in the grasp of the lower segment of the uterus; forcible extraction at this stage is a frequent cause of extensive laceration and has caused death of the mother. He agreed with Dr. Goodell as to the treatment of these cases in flattened pelves; the adaptation of the bitemporal diameter to the direct conjugate should be secured and the obliquity of Nagele should be maintained until the anterior base has well descended into the cavity of the pelvis. The late Dr. A. H. Smith laid great stress on the propriety of using the forceps to assist in the delivery of the after-coming head. In applying the forceps, flex the body of the child toward the dorsum, and the handles of the forceps should be on its anterior aspect. Pressure over the head of the child, while the body is swept toward the belly of the mother is not a good or safe method; the amount of traction required to extract the head is too great for the neck to bear. The forceps should be in readiness to apply as soon as the body has escaped from the vulva.

Dr. Ellwood Wilson thought it a common mistake to hurry the delivery of the body of the child. When dilatation of the os is complete the child will descend with the arms folded on the body. He is as strong an advocate of the application of the forceps to the after-coming head as any man can possibly be.

Dr. Thomas M. Drysdale reported a

CÆSAREAN OPERATION

(see p. 621),

made necessary by the presence of a uterine fibroma impacted in the pelvis.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, November 9, 1887.

The President, Charles McBurney, M.D., in the Chair.

SUCCESSFUL CASE OF LAPAROTOMY FOR BULLET-WOUND OF THE INTESTINE.

Dr. Lange reported the following case: On the 12th of October he saw at the German Hospital a boy, fourteen years of age, who, twenty-four hours before, while playing with a small revolver (22 calibre), shot himself in the abdomen, the ball entering about one and a quarter inches below the navel, and about one inch to the left of the median line. He did not look as if he was suffering from shock. His pulse was 112 to 120, his temperature 101°, and he did not have much pain, although there was marked tenderness on making pressure over the left hypogastrium. There was some tympanites, and the abdominal wall was tense; the breathing was almost entirely costal. The normal liver-dulness was preserved, and there was no change in the ordinary percussion sounds. There was evidently commencing peritonitis, thus far limited to the left hypogastric region.

Laparotomy was performed at once, the abdomen being opened in a line with the point of entrance of the

bullet. The track of the latter could not be traced through the muscles, nor could any wound be found in the peritoneum, although there was a small extravasation in the retroperitoneal space. On opening the peritoneum, about an ounce of brownish, sanguinolent fluid escaped. The wound was enlarged to about six inches, and the intestines were lifted out and carefully examined. Seven perforations were found in the gut, both walls being pierced in three places, while the fourth wound involved only one wall. About four ounces of bloody fluid were discovered at the deepest point of the abdominal cavity, but it did not have a fecal odor, nor was any fecal matter mingled with it. The openings in the intestinal wall appeared as small, grayish spots surrounded by zones of hyperæmia. The mucous membrane was nowhere everted, but all the openings seemed to be firmly closed. At one point the track of the ball was visible in the wall of the gut. Six of the perforations were closed with three or four interrupted sutures of iodoform catgut, while the seventh was not touched, as it seemed to be firmly united.

The boy made a good recovery. The temperature did not rise above 101°, and became normal on the twelfth day, after evacuation of a mural abscess. The bowels moved spontaneously on the third day, in spite of opium, the discharge being dark in color and very fetid, this being probably due to decomposed blood. During the next four days they moved three or four times daily. The ball was not found in the stools, although search was made for it.

The interesting question in the case was: Might the boy have recovered if no operation had been performed? The exudation and extravasation might have been absorbed, and the peritonitis localized. To what degree, the reporter was asked, did the danger from gunshot wounds increase in proportion to the size of the projectile? There were cases on record in which spontaneous recovery had followed wounds from small bullets. In the one reported there was no evidence that fecal extravasation had occurred, and apparently the closure of the small wounds had taken place so promptly and accurately, that under proper care and treatment, without operation, the danger of secondary escape of the contents of the gut could naturally have been avoided.

Dr. Stimson recalled the case of a man who received a bullet wound of the abdomen, the ball, which was of moderate size, entering a little to the left of the median line, midway between the border of the ribs and the umbilicus. He saw the patient on the following day, and found a slight elevation of temperature, with marked tympanites. The wound was not probed, but there was good reason to believe that the bullet had passed into the abdominal cavity. Opium was administered, and the patient made a good recovery.

Dr. Wyeth said that in July, 1887, he had been called to a neighboring city to see a boy, aged sixteen years, who had been wounded by a rifle-ball (38 calibre), which entered the abdomen at a point two inches above the crest of the right ilium, and half-way between that spot and the spines of the vertebræ, and came out one inch below and to the left of the umbilicus. The boy complained of severe pain and suffered from shock, lasting for four or five hours, after which he rallied, and was in good condition from 10 P.M. until 6 the next morning, when symptoms of peritonitis developed. Dr. Wyeth saw him at 1 P.M., nineteen hours after the accident, and found him delirious, with a pulse of 160, a high temperature, and a tympanitic abdomen. He declined to operate, as death was inevitable. The patient died two hours later. The boy was strong and hearty, and would probably have recovered if laparotomy had been performed at once. Although an autopsy could not be obtained, the intestine was doubtless perforated.

Dr. Hall said that he had seen two cases of recovery from bullet wounds made with a 22-calibre revolver ball. He asked if any of the members had seen a fatal case.

Dr. Abbe replied in the affirmative. He had had under his care a strong man, who had received a wound in the abdomen from a bullet of 22 calibre. The ball entered just below the umbilicus, and exactly in the median line, perforating the intestine in four places, and the wall of the bladder in one; it remained within the latter viscus. Laparotomy was performed six hours after the injury occurred, and a pint of greenish fluid, mixed with fecal matter, was found just underneath the parietal wound, and surrounded by adhesions. The man died of shock fifteen hours after the accident. Uræmia doubtless contributed to his death, as complete suppression of urine occurred several hours before.

Dr. Wyeth cited an instance of the rapid formation of adhesions after a secondary laparotomy for volvulus of the intestine. The gut was so distended that it was necessary to puncture it in several places, the punctures being closed with sutures of black silk. The patient died in three hours, and even in that short time the sutures had become almost entirely concealed by plastic lymph.

Dr. Stimson said that about a year ago he had seen a gentleman who had accidentally shot himself with a revolver of 45 calibre, the ball entering the body a little to the left of the xiphoid cartilage and emerging at a lower point in the back, near the vertebral column. When seen he had paroxysmal dyspnœa with extreme pain. The wound was not probed, except to a sufficient depth to establish the fact that the ball had perforated the seventh costal cartilage; it was plugged with iodoform gauze. Under the use of opium, with rest, the patient recovered in three weeks. The bullet probably traversed the anterior part of the diaphragm, perhaps also the abdominal cavity, and certainly perforated the pleura, as the man had all the symptoms of perforation of the lung—hæmoptysis, with dulness over the lower part of the chest.

Dr. Lange thought that it was important to gather further experience about the question how soon after an average perforation of the intestine, with fecal extravasation, symptoms of septic peritonitis appeared, and, whether perhaps in a case like the one reported, where twenty-four hours after the injury only localized peritonitis existed, without particularly alarming symptoms, the assumption might be justified that the peritonitis was not due to the escape of the contents of the gut into the peritoneal cavity. The operation, which became necessary in searching for bullet-wounds in the gut, would always be a serious surgical interference, carrying danger in itself, to avoid which might, in a given case, be of the greatest importance.

Dr. Sands said that laparotomy in gunshot wounds

or the abdomen ought to be performed before the occurrence of grave symptoms. Experience must show how far we may safely explore the abdomen in order to ascertain the exact nature of an injury. Many patients doubtless lose their lives because the surgeon waits too long. Recovery, to be sure, is possible in the case of wounds made by small projectiles, but even these of small calibre may cause fatal extravasation. If it can be shown that laparotomy is not in itself very dangerous, it may obtain the preference in nearly every doubtful case, even when the bullet is very small. Until we know just what the risks of operation are, most surgeons will favor laparotomy. It may subsequently be shown that laparotomy for gunshot wounds of the abdomen is a very dangerous procedure, and the statistics will perhaps never bear comparison with the operations performed for the removal of ovarian tumors.

Dr. Stimson thought it equally important to collect evidence to show the danger following perforation of the abdomen by bullets of small calibre, for if that danger is less than that of exploratory laparotomy, the operation may still be controvertible.

Dr. Wyeth thought that the reason why wounds of intestine made by small projectiles do not invariably prove fatal, is due to the fact that the gut was not filled with gas at the time of the injury. If gas be present, it may escape into the peritoneal cavity, no matter how small the perforation.

Dr. Abbe called attention to the fact that in his case fecal extravasation had clearly taken place from one wound in the free border of the intestine. At every inspiration of the patient fluid was forced out at this point. It was evident that extravasation through such openings is inevitable as soon as the gut becomes full; whereas, when the perforations are at or near the attached border this is not apt to occur.

Dr. Hall said that he could recall only a single case in which recovery had occurred after fecal extravasation. In one instance (reported by Mikulicz) some pieces of potato, but apparently no feces, escaped through a perforation resulting from a typhoid ulcer.

Dr. Lange was sure that there were several cases on record in which recovery occurred after extravasation.

MARKED DIMINUTION IN THE SIZE OF A UTERINE FIBROID FOLLOWING REMOVAL OF THE APPENDAGES.

Dr. Abbe showed photographs of a patient upon whom he had operated a year before. She was a colored woman, aged twenty-four years, who had a uterine fibroid as large as a man's head, of three or four years' growth, which occasioned severe pain and attacks of flooding. Laparotomy was performed, with the assistance of Dr. Peters. It was necessary to lift the growth out of the pelvis before the appendages could be reached and removed, so that an intelligent idea of its size was gained. She made a good recovery, and had been perfectly well since the operation, so that she was able to work hard as a laundress. Menstruation returned regularly at intervals of twenty-eight days, but there was neither pain nor flooding. Her sexual feelings were not impaired. The girl was examined a day or two since, and it was found that the tumor had diminished in size, at least, one-half.

Dr. Lange said that he had had two patients under observation for upward of a year, upon whom he had performed the same operation. In both cases the growth had diminished to one-half the former size. One patient had not menstruated at all; the other had continued to menstruate for some time, and then had epistaxis every month instead.

Dr. Briddon asked if the persistent menstruation could not be explained by reference to the presence of a third ovary.

Dr. Abbe thought that this explanation could not be generally urged, because the recorded cases of supernumerary ovaries are comparatively few, while persistent menstruation after removal of the appendages, is not uncommon.

CALCULUS OF PECULIAR SHAPE.

The President exhibited two calculi which he had removed by the lateral section, from a boy, aged eleven years. One stone was almond-shaped, while the other was larger and presented two concave surfaces, which had apparently resulted from alternate friction against the other calculus. There was nothing peculiar about the shape of the bladder.

Dr. Lange asked if the biconcave stone might not contain a foreign body.

The President did not see how this would account for the peculiar shape of the calculus.

Dr. Briddon said that if a foreign body formed the nucleus it would be apt to have concentric layers completely surrounding it.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, November 7, 1887.

The President, D. Hayes Agnew, M.D., in the Chair.

Dr. Thomas G. Morton reported

THREE CASES OF LAPAROTOMY

which he had performed in the last five weeks, all of which recovered.

Case I.—A colored woman, aged twenty-six years, admitted to the Pennsylvania Hospital, September 20th, complaining of intense pain. The history was that two years prior to admission she had an abortion and that since then there have been many attacks of undoubted gonorrhœal infection. At the time of admission her features were pinched and temperature was 102°. Shortly afterward she had a sharp chill with a rigor which lasted half an hour. The right Fallopian tube was found much enlarged and there was evidently an abscess of considerable size connected with it. The left tube was also much enlarged, but he could not make out any distinct abscess connected with it.

Early the following morning the abdomen was thoroughly cleansed and an incision made. The left ovary, which was enormously enlarged, was bound down by adhesions, and an abscess, which was as large as a goose egg and connected with the right ovary, ruptured during the operation, the contents of the

abscess escaping into the peritoneal cavity. The tubes and ovaries were removed, the cavity thoroughly washed out with hot distilled water, and a drainage tube inserted in the lowest part of the abdominal cavity. In the tube was placed, as has been suggested by Dr. Joseph Price, a rope of absorbent cotton, which can be replaced as often as it becomes saturated with the discharge. This patient made a rapid recovery. Within twenty-four hours the temperature dropped from 102° to 99°. She is now perfectly well.

Case II.—Oct. 11th, a mulatto seamstress, aged twenty-seven, married, was admitted with prolapse of the right ovary. She complained of pain in the hypogastrium, the small of the back, the occiput, the vertex, and under the left breast, increased by motion, by defecation, by urination, and on the appearance of the menses, which had been irregular. Her general health had failed and for more than a year she had been unable to do any work. She has been married eleven years, but does not live with her husband. Has never had children. The uterus was normal, retroverted, and retroflexed. The right ovary was prolapsed, slightly enlarged, moderately fixed, and exquisitely tender. She was ordered hot vaginal douches twice a day with quinine. October 16th, the abdomen and pubes were shaved and washed with turpentine, soap, and water, and were covered with towels wet with the bichloride solution. Fifteen grains of quinine were given in the evening. The following day laparotomy was performed, an incision two and a half inches in length being made. The right ovary and tube were brought out after a few adhesions had been separated. Irrigation with boiled distilled water was then practised, and a glass drainage tube introduced. The wound was closed with catgut sutures. The cotton rope in the tube was changed as frequently as it became saturated with the bloody serum. The tube was left in until October 31st. On one occasion the temperature went up to 101.5°; this was due to constipation, and promptly dropped upon free exhibition of laxatives.

Case III. was interesting from the fact that it was unattended by symptoms from first to last. A colored woman, aged twenty, had been stabbed whilst at a ball, and was admitted to the hospital on the evening of Oct. 24th. The knife entered on the left side between the umbilicus and the anterior superior spinous process of the ilium, two and one-half inches from the latter. At the time of admission a mass of omentum protruded from the wound. He saw her about 11 P.M.; she was in fairly good condition. As there was undoubted penetration of the peritoneal cavity, he had no hesitancy in at once making a median incision five inches long. The intestines were carefully examined throughout their whole length, but no injury was found. The omentum was returned, and the abdominal wound closed with four silk and seven catgut sutures. No drainage tube was employed. The next morning she got out of bed, and insisted on going home. She was constrained to remain until the sixth day, when she went home and resumed her usual duties. Five days later she returned to the hospital and had the stitches removed. The temperature never went above 99°. He has visited her twice since, and she was perfectly well when last seen, a couple of days ago.

There is one point with reference to the drainage tube to which he desired to allude. When a drainage tube is introduced, it is, of course, surrounded by intestines, and it seems remarkable that there should be no inflammatory action about it, other than sufficient to cause the exudation of the column of lymph which surrounds the tube.

Dr. D. Hayes Agnew said that he recently saw a case where an attempt had been made to remove an abscess, the result of perituterine cellulitis. In cutting down the bowel was opened. A tube was then put in, and when removed, a short time after the operation, there was left a perfect canal communicating with the bowel, through which feces escaped. The tube had been allowed to remain ten days.

Dr. William Hunt said that the rapidity with which this exudation takes place explains many cases of recovery after wounds of the intestine where laparotomy has not been performed.

Dr. O. H. Allis pointed out that in stab-wounds of the abdomen it is often difficult to say what damage has been done. A party of children were playing football in a neighboring town. While one of the children was repairing the ball some one pushed him, and the blade of a penknife penetrated the abdomen. The wound did not cause any pain, and nothing was known of it until the development of peritonitis.

Dr. J. M. Barton said that it is often claimed that there is no danger from a laparotomy, but there is a certain element of risk. He thought that it is a matter of great importance not to open the abdomen unless there are symptoms calling for it. He has now under observation a young man who, a short time ago, while gunning, slept in an unfinished club-house. During the night he got up and walked out of an open doorway in the second story, falling a distance of twelve feet and striking the abdomen on the edge of a rafter. He was considerably shocked and lay in the club-house until morning, when he walked a distance of a mile and a half to the railroad station. That evening he had decided peritonitis. When seen in consultation the following morning, the question arose as to the advisability of opening the abdomen. From the fact that the man had been able to walk a long distance, he concluded that there had been no rupture of the intestine. If there had been, he should have expected decided collapse. The peritonitis was violent and the temperature high. Under ordinary treatment the man recovered in a week's time.

Dr. Thomas G. Morton said that in connection with suppurative disease of the tubes, he would refer similar disease attacking the testicle to extension by continuity of specific inflammation of the urethra. He recently had a case of great enlargement, the result, apparently, of ordinary inflammation of the testicle, in a man, fifty years of age, who had a hernia on the affected side and was unable to wear a truss on account of the condition of the testicle. He decided to remove the testicle, believing that there was degeneration of the gland. In the centre of the testicle a cavity containing two and one-half drachms of pus was found. He had another similar case, convalescent, in which he pursued the same treatment, and found similar conditions. There is no reason why suppurative inflammation should not analogously travel along the tube in the one case as well as in the other.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, November 7, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. SOLOMON SOLIS-COHEN read a paper on

LAVAGE IN THE TREATMENT OF GASTRIC AFFECTIONS.

Any agent, or any method which promises to enlarge our therapeutic resources against those obstinate conditions of "gastric catarrh," "functional dyspepsia," etc., which are a source of distress to the patient, of annoyance to the physician, and of profit to the pepsin and patent-medicine manufacturers, deserves at least a respectful consideration. The method of lavage, or irrigation of the stomach, has been employed for many years in Europe, so that it can no longer be considered to be merely on trial. In America, however, it has not won general introduction.

In the treatment of the more readily accessible mucous surfaces, whether of the eye, the nose, the throat, the vagina, or the urethra, the importance of keeping the parts free from morbid secretions, from the products of desquamation, and other sources of irritation, is not a matter for debate. The extension of the same principle to the treatment of affections of the gastric mucous membrane, is but a question of mechanical detail, not of therapeutic justification. Kussmaul, in 1867, employed a doubly-acting stomach pump to irrigate the stomach with alkaline solutions (Carlsbad water), and it is to this observer that we are principally indebted for a study of the method, mechanically and therapeutically.

The apparatus and its employment are sufficiently simple. An œsophageal tube with blunt, double-eyed extremity, of flexible rubber, about twenty-eight inches long, and from one-quarter of an inch to a little less than half an inch in diameter, is attached by a small section of glass tubing to a soft-rubber tube about one yard in length, into the free extremity of which a glass or rubber funnel, of from six ounces to eight ounces capacity, is inserted. Sometimes the free extremity of the œsophageal tube is slightly stiffened. The œsophageal tube having been dipped into warm water or warm milk, is placed within the entrance of the œsophagus, and is then propelled by successive pushes into the stomach; the process being facilitated by efforts at deglutition on the part of the patient.

The funnel is then elevated to the level of the patient's forehead, and from a pint to a quart or more of the lavage solution is slowly poured in; the glass junction tube permitting its passage to be watched, and obstruction or attempted regurgitation to be detected. The patient's sensations will usually inform us when a sufficient quantity of the solution has entered the stomach. As the last portion of liquid disappears from the funnel, the soft-rubber tube is pinched near the extremity, the funnel is rapidly inverted over a receptacle placed upon the floor; and the contents of the stomach are thus removed by siphonage. These manœuvres are repeated until the returned fluid is clear. Sometimes during the withdrawal of the solution, solid particles of food (grains of corn in one of my cases) may become impacted in the eyes of the tube, and the flow of liquid will cease. A little more of the solution must then be introduced, both to wash away the obstruction and to reëstablish the siphon current. If the tube should be pushed too far into the cavity of the stomach, it may curve upon itself and the siphon will not work. Withdrawal of the tube for a few inches will remedy this.

When *lavation* alone (washing) is the object of the procedure, a weak alkaline solution is employed; a drachm or two of sodium sulphate, sodium chloride, sodium borate, or sodium bicarbonate, in a quart of warm water, at about 100° F. Should it be considered necessary, however, various sedative or antiseptic medicaments may be added to the lavage solution. Those most highly recommended are resorcin (one per cent.), boric acid (one per cent.), creasote (one per cent.), carbon disulphide water (one part of a solution containing fifteen grains to the quart, to two parts of water), charcoal powder (two to four tablespoonfuls), chloroform water (saturated), bismuth subnitrate (two tablespoonfuls to the pint). In the use of agents like resorcin, carbolic acid, etc., the liability to absorption if the solution be not all removed, must not be forgotten.

The effects are said to be most marked in cases of dilatation of the stomach, in which delayed digestion, retention and putrid fermentation of the contents of the stomach, give rise to distressing symptoms. In all cases where the gastric mucous membrane is in a catarrhal condition, coated with the glairy mucus which is seen amid vomited matters, or bathed in the sour liquid ejected as "water-brash;" where the production of gastric juice is impeded, or the secretion altered in quality by an abnormal condition of the membrane, extending perhaps into the tubules, or by the presence of irritative matters; where fermentation of ingested and retained matters takes place; in short, in the typical case of chronic gastric catarrh or acid dyspepsia, lavage will be found highly useful. It removes any undigested matters remaining in the viscus, cleanses it from products of desquamation and morbid secretion, and gently stimulates the glands and absorbents to healthy action.

In the chronic gastritis of drunkards, the measure is said to be an excellent palliative, nor is hæmatemesis considered a counter-indication, unless actual ulceration exists. In cancer of the stomach it is useful as a palliative measure.

Within the last few years two new applications of the lavage method have been found. In 1885, at Kussmaul's clinic, and subsequently by Senator, Rosenthal, and other observers, it has been successfully employed in the treatment of ileus. Kussmaul explains this result by the theory of relief to the tension above the point of constriction, caused by gases and accumulated feces; with concomitant restoration of normal peristaltic action.

While the practice is usually confined to chronic cases, Dr. Cohen had occasion to resort to it in one case of acute indigestion with obstinate vomiting, in a phthisical, slightly hysterical female; with gratifying result—in that the vomiting, rebellious to diet and medication, yielded to two applications of the stomach tube. In this case, before withdrawing the tube, warm milk was introduced into the stomach. Indeed, there can be little doubt that, in connection with *gavage*, or forced feeding, irrigation of the stomach assists in maintaining nutrition in phthisis and other wasting diseases.

DR. J. TYSON said that in one case of dilatation of the

stomach he had used lavage with a great deal of comfort to the patient. In a second case in which he employed it, the result was not so satisfactory, and it caused great discomfort.

Dr. W. Osler said he should like to state his experience in the use of irrigation, as this is a measure in which he has been interested for several years. In the first place, there is serious objection made to the procedure by at least one-half of the patients, on account of the discomfort experienced in the introduction of the tube. The soft tube is sometimes very difficult to pass, and sometimes it is necessary to resort to the stiffer tube. Where the patient himself performs the operation, it is, of course, better that he should have the soft tube. He is of the opinion that this measure has a much narrower field than the statements of French and German writers would lead one to infer. He would not hesitate to predict that within a few years, when the fashion has subsided, this measure will be confined entirely to cases of obstinate gastric catarrh in which it is of inestimable service, and to cases of dilatation of the stomach, in which it is not only of service but absolutely indispensable, as we have no satisfactory treatment for dilatation of the stomach other than irrigation.

Dr. J. P. C. Griffith said that during the past year he had been much interested in lavage in the diagnosis of diseases of the stomach. We, in America, are, however, unable to study the matter to any great extent, owing to the rebellion of patients to this method of examination. German patients appear to be more tractable, and Riegel reports that during the year 1885 he made over 1300 examinations of the gastric juice in 122 cases; and in 1886, tested 134 cases in a similar way. Every patient presenting evidences of disease of the stomach was submitted to lavage, and the gastric contents thus obtained were subjected to a chemical examination. Riegel's method is to administer to the patient an ordinary mixed meal, and after about six hours—the stomach should be empty at the end of seven hours—to remove the gastric contents, if possible, undiluted by the employment of water, and to filter them. He then tests the filtrate in order to determine especially the presence or absence of hydrochloric acid, and the peptic strength. The tests are at once simple and very delicate. He employs a variety of these, but the ones which have proved most satisfactory in the speaker's hands, and with which he feels most familiar, are the reactions with methyl-violet and Congo-red for hydrochloric acid; and Uffelmann's carbolated iron test, for lactic acid. In the presence of a small amount of free hydrochloric acid a dilute solution of methyl-violet will turn to a blue color, and Congo-red will also be changed by the acid to a blue.

The results of Riegel's experiments are very interesting, and have been fully confirmed by Korczinski and Jaworski, and by Sansoni. It has been found that in carcinoma of the stomach hydrochloric acid is almost invariably absent, and that the peptic strength of the gastric juice is wanting; so that the attempt to digest albumen artificially with the filtrate fails. In dilatation of the stomach there is always a large amount of lactic and butyric acids, though hydrochloric acid and pepsin are also present. In dilatation, therefore, the trouble is not due to lack of digestive power, but to stenosis or to want of muscular power. Gastric ulcer is almost always preceded and accompanied by a hyper-secretion of hydrochloric acid. In cases of ordinary dyspepsia there is not a diminution of the gastric juice, but usually a hyper-secretion. Riegel claims, therefore, that it is bad therapy to put every case of dyspepsia on a routine treatment of hydrochloric acid and pepsin; and that the chemical examination of the gastric contents is a *sine qua non*.

A case recently in the University Hospital illustrates the value of this aid to diagnosis. A man was admitted in an extremely anæmic and emaciated condition, and with subjective and objective symptoms of gastrectasia. The signs of this disappeared, however, when the diet was carefully regulated; but in spite of the apparent digestion and absorption of food, he became more anæmic and weaker. The diagnosis of carcinoma of the stomach was entertained, and it was thought that some induration could be detected in the pyloric region; but the contents of the stomach were removed with the tube, and the filtrate found to contain an abundant supply of free hydrochloric acid, and to digest albumen perfectly. On this ground carcinoma of the stomach was excluded. The man subsequently died, and cancer was found to be absent; the source of the induration being a thickened and somewhat stenosed pylorus, due to a duodenal ulcer.

There is at the present time another case in the hospital, where gastric ulcer has been suspected, but the examination of the contents of his stomach has shown that digestion is retarded, and that there is no reaction for hydrochloric acid with the methyl-violet test. Assuming that the German observers are correct, the presence of ulcer is excluded in this case.

The President said that he could personally speak of the value of lavage in the treatment of dilatation of the stomach and in carcinoma. For the past twelve years, at least, he has been in the habit of using this measure, from time to time, during his terms of service at the German Hospital. Following the example of Kussmaul, he has usually used a solution of the Carlsbad salt of the strength of the natural water. In cases of dyspepsia he has more recently preferred to use copious draughts of hot water to wash the contents of the stomach into the bowel. In the introduction of the tube into the stomach a great deal depends upon the skill and experience of the manipulator. He suggested that the tube could probably be swallowed with greater ease, if its lower end were weighted with a ring of lead.

Dr. S. S. Cohen said that his experience has been that it is difficult to get patients to submit to this measure. If, however, the first three or four times can be bridged over, the relief afforded is so great that the patient will allow it to be continued as long as necessary. The results obtained in cases of obstinate gastric catarrh, after the failure of all medication and regulation of diet, have been so satisfactory in the relief of symptoms, and in the almost reëstablishment of the normal condition, that he is encouraged to continue the use of the procedure. In dilatation of the stomach it is especially recommended, and is the only thing to be done. It would seem that in cases of vomiting due to the presence of sarcinæ, washing out of the stomach, with the subsequent introduction of a sufficient quantity of some safe antiseptic solution, would be one of the best plans of treatment. The tube has also been used in cases of poisoning, where the stomach-pump was not at hand.

Dr. E. T. [illegible]ren reported the following case of

LAPAROTOMY FOR TUBERCULAR PERITONITIS.

John B., aged thirty-four. Admitted to the Philadelphia Hospital May 8, 1887, with the physical signs of dry pleurisy, and of diffused thickening of the lower portion of the right lung. The sputa contained numerous bacilli of tuberculosis. The abdomen was prominent and distended with fluid in the central portion. The fluid in the central portions of the abdominal cavity was apparently confined in a species of sac, owing to adhesions formed between the peritoneum and the viscera, since changing the position of the patient did not change the distribution of the fluid. The liver and spleen were also enlarged, and there was marked dulness in the flanks and lumbar regions posteriorly. The abdominal distention rapidly increased, uninfluenced by any treatment which was instituted. On June 18th a gallon of clear serum, with some few shreds of lymph, was withdrawn. Unfortunately, paracentesis was necessitated about every three weeks thereafter on account of the rapid accumulation of the fluid, and the dyspnœa occasioned by it. The pulmonary process being latent, and the general condition of the patient excellent, laparotomy was suggested, and it was thought that possibly by irrigation of the abdominal cavity with antiseptic solutions the character of the inflammatory processes might be modified and the reaccumulation of fluid prevented. On June 28th Dr. Deaver opened the peritoneal cavity evacuating a large amount of serum, but no pus.

The peritoneal surface was injected, dark red in color, roughened and covered with flakes of plastic lymph. After drainage, iodoform was dusted freely over the peritoneal surfaces and the wound closed. The patient's subsequent history was unsatisfactory. Vomiting was a continuous symptom, and death occurred July 6th, nine days after the operation.

At the autopsy it was found that an acute attack of peritonitis had followed the operation. Extensive adhesions existed along the course of the colon; the diaphragm on the right side was welded to the liver, and on the upper surface extensive adhesions to the pulmonary pleura had been formed. The lower lobe of the right lung was infiltrated with nodules of miliary tubercle, the left lung was normal.

This case is reported because the number of cases of chronic peritonitis on record is limited in which abdominal section has been performed. While tubercular peritonitis is a most serious disease, yet the process may become latent, as is so fain bar in tubercular pleurisies in the course of phthisis. Just as the gravity of tubercular pleurisy depends upon the pulmonary lesion, so the gravity of tubercular peritonitis depends upon the extent of the frequent antecedent lesions present in the bowels and to the impairment of the functional activity of the digestive tract by the adhesions.

The indications for laparotomy would seem to be the same as those which guide us in the inflammation of neighboring serous membranes, the pleura, and the pericardium. Incision should be avoided in tubercular peritonitis unless the inflammation is purulent. Not only so, but when the tubercular process is present even paracentesis should be practised only in those cases in which dyspnœa, from over-distention of the serous sac with fluid, threatens life. The danger of operative interference in tubercular inflammation of serous sacs is, that the inflammatory process nearly always becomes purulent.

Dr. Osler did not believe that surgical interference will ever come into vogue in the treatment of this condition, as the general condition of the patient is, as a rule, such as not to warrant surgical interference. In the case reported, the rapid reaccumulation of the fluid brought in an element which rendered it more probable that incision would be of service.

Dr. W. G. Porter said that some six months ago a patient was admitted to the Presbyterian Hospital with a considerable collection of fluid in the abdomen, and on palpation a growth could be felt, the exact nature of which he could not determine. It was decided to make an exploratory incision. On opening the abdomen an extensive tubercular peritonitis was found. Since the operation, the woman has remained in about the same condition as previous to it.

Dr. DeForest Willard read a paper on

REMOVAL OF FOREIGN BODIES IN THE URETHRA AND BLADDER BY LITHOLAPAXY EVACUATOR WITH LARGE, STRAIGHT, OPEN-ENDED CANULA.

His object in bringing before the Society the subject of urethral and vesical foreign bodies was simply to emphasize the value of the evacuator (ordinarily used in rapid lithotrity to extract the calculous fragments) for removing other more or less solid substances that have found their way into the urinary tract, either by accident or design.

About one-tenth of inserted foreign bodies will be spontaneously expelled, but when the *vis a tergo* of the urine fails to wash out either a calculus or an object inserted through the meatus, the safest and surest plan is to attach to an ordinary litholapaxy evacuator (Bigelow's or other improved pattern) a large, straight tube, which is open at both ends. It contains a movable stylet for ease of introduction. The size should be the largest that the urethra will possibly admit (after nicking the meatus, if necessary), say French, No. 29 or 30; American, No. 19; English, No. 16, for adults; children in proportion. The possibility of the passage of the body through the tube should be determined, if possible, by actual trial, provided a similar piece can be obtained. Rarely will any bougie larger than the above-named size be found in the bladder or urethra.

The method has been so satisfactory in his hands, that he always resorts to it with confidence, to the exclusion of all other primary devices.

If lodgement has occurred in the urethra, the canal must be firmly closed by finger pressure behind the object, while the metallic tube is slid down and carefully caused to engage the catheter or other mass within its calibre, when the bulb of the instrument is slowly compressed until the water has distended the urethra to its fullest limit, thus liberating the body, when suction is suddenly applied while the penis is stretched forward. Unless the mass be firmly caught and imbedded in a pocket, this manœuvre rarely fails after a few trials. The quantity of water that can be contained in the urethra is so small that the body may require two or three efforts to withdraw it the whole length of the instrument. The water should be injected very slowly,

but the suction current must be made forcibly. Inspection of the rubber tube can be made through the upper opening without detachment of the catheter.

Avoid employing forceps until unsuccessful with the above method, but when necessary to be used, the superiority of the canula again asserts itself. The forceps can be manipulated through its calibre, and if the object be compressible enough to pass the bore, withdrawal can be accomplished without the slightest injury to the mucous membrane. Objects of larger size than this tube can seldom be withdrawn with safety by any method save cutting. Hairpins can be compressed through the walls of the urethra, and their points passed into the calibre, when they can be completely pushed within the bore and easily withdrawn. Beads, peas, pebbles, etc., will easily enter the canula by suction. Catheters, wires, etc., will usually require the assistance of forceps. Barbed heads of grain can also be ensheathed and withdrawn by this device.

If the object has passed into the bladder, the evacuator becomes an even more essential aid. A straight instrument is not always easy of introduction, but the security gained against subsequent urethral injury abundantly repays for the trouble. If a flexible or spirally cut obturator is used, the introduction is rendered much easier. The tube is used first as a sound to discover the offending body, when the bulb of the evacuator is first slowly compressed, so as not to disturb the fragment. Suction should always be made quickly, so as to draw the body with force. Failing, the water is next ejected with more energy, so as to move the fragment into better line with the calibre, suction being again rapidly applied. The hard substances will not be driven against the sides of the bladder with any more power than are calculous fragments, and unless consisting of broken glass will not be as angular. If the body is rounded, and of size that can pass the bore, it will in a few moments be found in the bulb. If very long, like a catheter, or pencil, or wire, the chances are not so good that it can be brought into line with the calibre of the tube. As a bougie ordinarily breaks at or near the eye, however, its passage is more than probable. Failing, after ten minutes of gentle trial, a lithotrite should be introduced if the body is a bougie or pencil, and is capable of being cut or pinched in two, and the division made. A cutting lithotrite, like Caudemont's, is manufactured, but is seldom found among the paraphernalia of surgeons, and the fenestrated instrument of Thompson is far safer. If the bougie is old and brittle, as is presumptively the case, such division with a lithotrite is easily accomplished. The segments can then be sucked out, and their total length carefully compared with the remaining portion or lost body. Every particle must be secured, lest it form the nucleus of a future calculus. Even the broken jaw of a lithotrite might be drawn into the bore.

Should these manipulations fail, there are two forms of forceps which he has had made of just sufficient length to be slightly protruded from the end of the tube. In the one, the jaws open by a spring, as in the old Halles' forceps; and in the other, the jaws are worked by handles, as in the Mathieu and Gross, and "alligator" patterns. Careful attempts can now be made to seize the body and extract it through the catheter. If small enough to be brought through, it is a great satisfaction to know that no possible injury can be done to either the neck of the bladder or the urethra, as is so likely to occur when a body is extracted in the jaws of a lithotrite. Necessarily only a small proportion of introduced objects can be removed per urethram, and Dr. Willard holds that any foreign body too large to pass the calibre of this No. 29 tube, unless it be very soft and pliable, should be removed by cystotomy, either perineal or suprapubic.

He summarized his views as follows:

1. The litholapaxy evacuating tube, large, straight, and with open end, is the surest and safest instrument for the removal of foreign bodies from either urethra or bladder.

2. The fenestrated lithotrite should be employed to break up all bodies capable of division.

3. Incision of urethra or bladder is safer than a tear of the neck of the viscus or of the canal.

4. The suprapubic and median perineal are the safest routes of entrance to the bladder when suction fails.

5. Forceps should be used with the greatest care, and always through a straight tube, which insures protection both to the urethra and neck of the bladder during both exploration and extraction.

CORRESPONDENCE.

THE AMERICAN PUBLIC HEALTH ASSOCIATION MEETING.

The fifteenth annual meeting of the American Public Health Association at Memphis, had before it papers and discussions that cannot but be of great service for the progress of sanitary science and art. The presidential address of Surgeon Sternberg had in it many suggestions as to practical administration, besides its valuable outline of the progress of knowledge as to the relations of microörganisms to disease. As it is published in The News, we need not enlarge upon it.

The list of general subjects opened with two brief papers by Dr. E. M. Hunt, of New Jersey. The first of these, on the "Origin of Some Diseases," also appears in The News. Its contentions as to the possible origins of some diseases caused a lively debate, in which various views of agreement or dissent were expressed. The second paper discussed prophylaxis as applied to some diseases. It sought to show that antecedent medication had in practice prevented or limited some diseases and was to be reckoned as one of the methods for checking many diseases and preventing them from becoming epidemic. In addition to citations from individual experience, the experiments in preventing anthrax which were tried by Dr. Cast for the Local Government Board, were debated with the facts as to their successful issue. Two short papers followed, by Dr. Hiersch, of New Hampshire. The one treated of the care of deceased bodies and the modes of protection from too rapid interments, and the other advocated the inspection of all animals slaughtered and of all animal foods, in the interest of health.

A paper of much value was presented by Surgeon J. S. Billings on "Some Forms of Vital Statistics, with Special Reference to the Needs of the Health Department of a City." The paper especially commended

the machine for tabulating statistics recently invented by H. Hallerett, which, by means of an electric arrangement and a punched card system greatly facilitates the various combinations into tables.

On the second day the first paper offered was "On the Importance of Protection to the Meat Supply of the Country." Dr. Azel Ames presented many statistical facts and arguments showing that the meat supply was decreasing in quantity and quality and that animal diseases were causing great ravages. It is certainly time that the subject should be considered in its sanitary as well as in its economic bearings.

The most of the day was devoted to the consideration of quarantine systems. Dr. Rauch, of Illinois, opened with a paper presenting some of the defects of our present system and the shortcomings of particular stations. He urged a closer relation between the States and the General Government, contending that each quarantine was of National rather than of State import and urging for consideration the question whether a National system should not be adopted. He was followed by Dr. Montizambert, the Health Officer who guards the St. Lawrence. He showed how the Canadian system was placed under the charge of the Dominion Government instead of being left to one province. The powers of quarantine are large, the provisions therefore good, and the administration accurate. They have separate hospitals on the ships for certain contagious diseases. No passenger can be landed unless vaccinated within seven years or unless he has had the smallpox. There is a defect, that this does not apply to cabin passengers. A compact battery of nine furnaces is employed for the disinfection of vessels with sulphur dioxide. The quarantine steamer is provided with the most complete appliances for speedy renovation of ships and all that appertains thereunto.

Dr. Bell, of New York, followed in explanation and in partial defence of the New York quarantine. He admitted many defects which had been long urged by the Health Officer, but claimed that Dr. Smith had not only made good use of what he had, but that he has rapidly and successfully improvised methods for the thorough handling of ships and passengers. Dr. Bell had himself superintended the steaming of clothing and the general fumigation. The discussion was shared by many others, and brought out most serious facts as to the defects in appliances in most of our Atlantic coast stations. In the evening, Dr. Holt, of New Orleans, gave an address as to the system at New Orleans, accompanied by a descriptive pamphlet. While the steaming and disinfecting methods are not new with him, he has shown admirable dexterity in perfecting appliances and in accurate administration. This port is probably now better protected than any other, and the States and their quarantine officers would do well to familiarize themselves with all the methods there used.

The same subject was continued the next morning in a special discussion directed by the State Boards of Health as to the feasibility of securing a National instead of a State quarantine system. It was opened by a paper read by Dr. Wyman, of the Marine Hospital Service, which was excellent, except that it had some special pleading as to the adaptability of the Marine-Hospital Service for the handling of a quarantine system. This led Dr. Holt and others to show that that service was intended for the hospital care of sick sailors, which is very different from the preventive administration needed for general sanitary service; and also to show how with the best intent there had been failure in many instances. The general sentiment did not seem to favor a national system, although it was admitted to be theoretically best. The prevalent conviction was that the General Government should put itself in close supervision or inspection of all stations; that by courtesy it should be able to find out by experts and to state all defects, and that so far as fitting up is concerned it should be a liberal contributor. For, as it was well urged, New York quarantine, for instance, is an interest to Illinois or Michigan as well as New York and is for National as well as for State defence, and so quarantines like rivers and harbors should have national appropriations.

The discussion was participated in by nearly every quarantine health officer present as well as by others well informed on the subject. It cannot but result in drawing the attention of Congress and of the whole country to the necessity of perfecting the sanitary seacoast cordon against the invasion of pestilential diseases. It is in vain to protect some sea-ports and leave others defenceless. It is in vain to have half measures and the mere forms of isolation and disinfection without the substance. The two great and possible protections against epidemics are isolation together with such cleanliness of persons and surroundings as will prevent the fertilization of disease. Both are alike important. We thus keep double guard. As to foreign diseases, isolation comes into special prominence. If the system is perfect, it is much easier to prevent diseases from transmission from the sea than upon the land. There must be systematized espionage over stations. There must be thorough fitting up with all the apparatus for isolation, disinfection, good air, good water, good food, good care, and sustained cleanliness. There must be effective administration, and we hope that sanitarians, that physicians, that Congress, that the people will not lie down at any one's bidding until the service is perfected and utterly divorced from the spoils system.

In addition to the address of Dr. Holt a part of the same evening was occupied by Prof. W. T. Councilman, of Johns Hopkins University, on the subject of malaria, with special reference to the microörganism of Laveran. His many culture experiments and inoculation tests confirm the descriptions of Laveran as well as those of Marchiafava and Celli. The changes in the blood and the different stages of the germ were well portrayed. It is pleasant to see that the work of Sternberg, Prudden, Salmon, Reeves, and others is being supplemented by new and original observations.

Next in importance was the subject of disposal of garbage as presented in the paper of Dr. Labergé, Medical Health Officer of Montreal, and in discussions and statements by Dr. Kennedy, of Iowa, Mr. Smith, of Pittsburg, and others. The chief contention was in favor of methods of cremation or incineration. Besides the forty incinerators now in use in Great Britain, some of which were described by Dr. Oldright and Dr. Hunt, descriptions were given of those operated in Des Moines, Milwaukee, Pittsburg, and Montreal. Their capacity to do the work effectually and economically and with-

out offensive gases seemed to be shown. The original cost is not far from $2000. They supply mostly their own fuel. They deal with night soil as well as with surface garbage. In our larger cities they will ere long come into use, especially in those so situated as that the refuse is greatly polluting the soil and the streams.

This subject of pollution of streams was also ably presented in the report of a committee on "The Pollution of Water Supply," by Surgeon Smart, of the Army, and by Prof. W. S. Williston, of Connecticut. These showed that in deciding as to pollution we must avail ourselves of all the facts as to quantity of sewage actually received, its relation as to distance to the intake of water-supply, the flow of the stream, and all the facts of the chemist, the bacteriologist, and the physician. Rudolph Hering, C. E., in a brief paper urged that the time had come for gathering accurate facts as to degree of dilution and effects of changes, and for the proposal of standards as to what are the limits of the use of streams and for determining which are to be used for sewerage only. Generally, rivers are not the best sources of potable water supply.

The Committee on Disinfectants reported progress, and now look upon their report as covering our present knowledge so nearly that they asked and received permission to incorporate their work in an additional volume of the *Transactions* of the Association.

For lack of time, or from the special and technical characters of the papers, some others that were offered and accepted by the Executive Committee were read by title or abstract.

From year to year the Association increases in its sphere of usefulness. While it has to do in part with popular information and with questions of practical administration, it also presents a fair share of original investigation and of the results of close observation and experience. Sanitary science and art are more and more dealing with thorough analysis and classified facts, and securing a basis for effective administration. This means results that will not only aid in the prevention of disease, but add much in the direction of skilled treatment.

Memphis, November, 1887.

IS LEPROSY A CONTAGIOUS DISEASE?

To the Editor of The Medical News,

Sir: I would offer an amendment of Terence's familiar line—*Medicus sum: medicini nihil a me alienum puto*—as my apology for trespassing on your columns in the case of Dr. Van Harlingen (whom I have not the pleasure of knowing), some cases of leprosy he was treating, and the Board of Health of your city, Philadelphia.

I learn from the reports in the daily newspapers of this city, that the Health Officer of Philadelphia had insisted upon the removal and isolation of some cases of leprosy which were under the care of Dr. Van Harlingen.

It would seem, from the action taken, that leprosy is regarded by the health authorities of Philadelphia as somewhat more contagious than smallpox, or the other exanthemata, and consequently I would offer the following in testimony against such an idea.

In 1880 a case of leprosy was admitted into the U. S. Marine Hospital wards at Hotel-Dieu, New Orleans. Subsequently the case was transferred to the U. S. Marine Hospital at Mobile. He was exposed to other patients, subjected to no rigorous quarantine or isolation, and no case developed among other patients.

I have often seen, during the years I was on duty in New Orleans, cases of leprosy in Charity Hospital of that city, On referring to the reports of that institution it may be found that, in 1885, there were of the different varieties of leprosy, six white and one colored patient treated. In 1884 two white patients were treated. In 1883 two white and one colored patient. In 1882 four white patients. In 1881 four white and one colored patient. The cases are treated in the hospital wards.

While on duty in Key West, Florida, in 1883, I treated a case of tubercular leprosy in a mulatto child, no isolation being considered.

In the Report of the Louisiana Board of Health for 1880, Dr. Joseph Jones has a paper on leprosy in Louisiana, and, though President of the Board of Health, does not insist upon the exclusion authorized by biblical law.

At any rate, it does not seem that the public alarm, and consequent unjust criticism of a professional man, are warranted by the lack of evidence regarding the existence in the United States of the environment, race dyscrasia, and other genetic factors which have served to make this disease the scourge of certain localities.

Very respectfully,

S. P. Armstrong, M.D.,
P. A. Surgeon U. S. Marine Hospital Service.

New York, November 22, 1887.

NEWS ITEMS.

The Officers of the American Public Health Association for the ensuing year are:

President.—Charles N. Hewitt, M.D., of Red Wing, Minn.

First Vice-President.—G. B. Thornton, M.D., of Memphis.

Second Vice-President.—Joseph Holt, M.D., of New Orleans.

Treasurer.—J. Berrien Lindsley, M.D., of Nashville, Tenn.

Executive Committee.—Henry D. Baker, M.D., of Lansing, Mich.; S. H. Durgin, M.D., of Boston; J. N. McCormack, M.D.

The next meeting will be held at Milwaukee.—*Sanitary News*, November 19, 1887.

The Quarantine at Baltimore.—The *Maryland Medical Journal* of November 12, 1887, writes that the Health Officer of that city thinks the committee of the College of Physicians of Philadelphia has formed an imperfect judgment concerning the quarantine facilities at the port of Baltimore. He argues that the present accommodations are adequate for the proper protection of the city against the introduction of cholera at this port. We are unable to agree with the opinion of our efficient Health Officer. We fail to see how the present arrangements at Hawkin's Point could provide a suitable quarantine for a steamship load of immigrants arriving at this port with cholera on board. Seventy-five hospital beds and any number of army tents, will not comfortably

protect six or eight hundred immigrants. Unless the quarantine establishments of all American ports are taken out of the hands of our State and Municipal authorities and placed under the control of the General Government, the present shortcomings pointed out by the committee of the College of Physicians are not likely to be corrected.

THE COMMITTEE ON DISINFECTION, OF THE AMERICAN PUBLIC HEALTH ASSOCIATION, at its recent meeting, advised essentially the same disinfectants recommended in 1885; the solution of chloride of lime was made $6\frac{2}{3}$ to the gallon instead of $4\frac{2}{3}$, as previously ordered.

PRIZE ESSAYS ON HYGIENIC COOKING.—MR. H. LOMB, of Rochester, offers one prize of $500 and one of $200 for the best essays on practical, sanitary and economic cooking, adapted for persons of moderate and small means. The award is under the auspices of the American Public Health Association.

PREGNANCY AFTER OVARIOTOMY.—A recent writer in the *Lancet* reports his attendance upon a woman in her seventh confinement since the removal of an ovarian tumor by Sir Spencer Wells, in 1875.

AMERICAN PATENT MEDICINES ABROAD.—We are informed that under the Austrian laws regulating pharmacy American patented preparations of hops and also of hypophosphites have been prohibited from sale in Vienna. A Berlin merchant was lately sentenced to eight days imprisonment for selling "St. Jacob's Oil" as a medicine.

THE TELEPHONE IN MEDICINE.—The very common use of the telephone in the business world affords a sufficient guarantee that, in spite of occasional difficulties, inconveniences, and failures in its working, there remains a substantial balance of advantage. The facilities which it has introduced into the ordinary course of domestic life have also been considerable, though the time is probably far distant when even the majority of households will possess the luxury of a telephone communication. In the emergencies of illness, particularly, there is much to be said in favor of this mode of intercourse. It is, above every other, simple, swift, and safe, and must commend itself alike for the expeditious conduct of practice and the treatment of disease. In the management of joint medical practices which cover a considerable area it is very obviously useful. Of its proved value in cases of special urgency, we need say little. A particular interest, however, attaches at the present time to what is probably its latest application. This is its employment as a part of the system of isolation, so imperative in the management of infectious illnesses. We are informed that one of the effects of the recent scarlatinal outbreak in the metropolis has been to establish, in some instances, an in-door telephone system, which, without the slightest risk of infection, brings a patient, so to speak, within touch of his friends and relatives. Whether it is to be an unmixed advantage must, of course, depend upon the discretion of those concerned. Rightly used, it may even prove a boon of some considerable curative influence. A certain gain which it confers is, of course, the comparative leisure allowed to attendants on the sick. There is no answering bells to find out what is needed, the door of the sick-room is less frequently opened, and fatigue generally, as also the risk of infection, is materially lessened. The value of this form of communication in hospitals is obvious. We would suggest its more general adoption were it not that we fear that in many cases the cost might prove a barrier. It would be easy to speak at greater length upon this topic, but it is hardly necessary when the public already recognize, at least in theory, the position of this useful invention among the amenities of life.—*Lancet*, November 5, 1887.

SOUND-BLINDNESS.—The phenomena of color-blindness are well known, and have been carefully investigated. We know that some persons can see to great distances, discern minute objects, enjoy works of art, and yet are unable to distinguish certain colors. Physiologists, and especially psychologists, have also found that there is a similar series of phenomena to be observed in connection with the sense of hearing. If a word were coined to describe these phenomena, it would naturally be "sound-deafness," but many who have written on this subject seem to prefer the term "sound-blindness."

A writer in the London *Journal of Education* uses the term "sound-blindness," and seems to have come to the subject from a pedagogic standpoint. He states that the difficulties which some persons have in learning to spell and in learning how to pronounce foreign languages suggested to him the possibility of the existence of such a thing as sound-blindness—an inability to distinguish particular shades of sound, arising from some organic defect in the ear which is distinct from deafness, as that term is commonly understood.—*Science*, November 18, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM NOVEMBER 15 TO NOVEMBER 21, 1887.

PERIN, GLOVER, *Colonel and Assistant Surgeon-General.*—Retired from active service, November 17, 1887, by operation of law.—*S. O. 268, A. G. O.*, November 17, 1887.

SMITH, A. K., *Lieutenant-Colonel and Surgeon.*—Assigned to duty as attending surgeon in New York City.—*S. O. 269, A. G. O.*, November 18, 1887.

SMITH, J. R., *Lieutenant-Colonel and Surgeon.*—Ordered for duty as Medical Director, Department of Dakota.—*S. O. 269, A. G. O.*, November 18, 1887.

HORTON, S. M., *Major and Surgeon.*—Granted six months' leave of absence on surgeon's certificate of disability.—*S. O. 269, A. G. O.*, November 18, 1887.

ARTHUR, W. H., *Captain and Assistant Surgeon.*—Granted two months' leave of absence, with permission to apply for two months' extension, to take effect on the arrival at Fort Niagara, New York, of Assistant Surgeon Paul R. Brown.—*S. O. 269, A. G. O.*, November 18, 1887.

KEAN, J. R., *First Lieutenant and Assistant Surgeon.*—Granted two months' leave of absence, to take effect about December 1st.—*S. O. 269, A. G. O.*, November 18, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 19, 1887.

RINEY, P. M., *Passed Assistant Surgeon.*—Ordered to the Naval Dispensary, Washington, D. C.

THE MEDICAL NEWS.

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ORIGINAL LECTURES.

CHRONIC BRIGHT'S DISEASE.

A Clinical Lecture Delivered at the Good Samaritan Hospital, November 23, 1887.

BY JAMES T. WHITTAKER, M.D.,

PROFESSOR OF THEORY AND PRACTICE OF MEDICINE AT THE MEDICAL COLLEGE OF OHIO.

Reported by JAMES M. FRENCH, M.D.

Wm. H. McD., grocer, Irish, admitted to the hospital May 24, 1887. Had been ill about six weeks. First noticed disorder of stomach and bowels; constipation, vomiting, and headache. After short treatment outside of hospital, he improved, and was able to be around. About two weeks after the first attack swelling of the legs set in below the knees and above the ankles; this swelling increased and extended upward. At the time he entered the hospital the scrotum was beginning to swell, as also the abdomen. The face was puffed, especially under the eyes; he was pale and waxy-looking. Constipation continued and was relieved by hydragogues given to reduce the dropsy. The swelling of the feet, legs, scrotum, and penis increased in spite of treatment.

June 5th the feet were punctured with a needle. The reduction thus obtained was but temporary. June 7th, the feet, scrotum, and penis were punctured with antiseptic precautions. This operation allowed the escape of a large quantity of water, and gave much relief, since the swelling of the penis had interfered with the passage of urine. About June 20th he began to suffer from violent headaches and vomiting. These symptoms were relieved, to some extent, by active purging. July 1st, he began to take hot baths daily at 105° F., lasting twenty minutes. This treatment rapidly relieved the headaches and vomiting, and reduced the general dropsy. His general condition improved decidedly. About August 1st, he began to cough, and cough has continued since. Some dyspnœa existed at the same time. August 16th, he left the hospital to visit near Maysville, Ky. While there the baths were discontinued. About two weeks after leaving he began to feel worse; the cough became more annoying, the dyspnœa increased, and he had pain in the region of the heart. Now for the first time attacks of palpitation of moderate severity began.

September 11th, he reëntered the hospital. The dropsical condition was as marked as at any time before. His chief complaint now was of the cough and dyspnœa. The latter was so severe at times as to prevent his lying down. Both cough and dyspnœa were worse at night. He was again given hot baths every night at a temperature of 110° F. These baths now seemed to depress him greatly and excited attacks of dyspnœa, which lasted several hours. The third bath induced an attack from which he was with difficulty revived. The action of the heart became labored and irregular. This last was the most severe attack he had had, and lasted six hours. The baths were then discontinued. Since then the swelling of the feet, legs, scrotum, and penis has gradually increased, so that at present urination is somewhat interfered with. His appetite has been continuously good. When he entered the house the urine contained a large amount of albumen, No casts were found. June 15th, he passed seventy-two ounces of urine in twenty-four hours. Albumen was still abundant, no casts. Specific gravity 1.020. Since then the urine has been examined a number of times; albumen has always been abundant, but no casts have been found. During the last twenty-four hours he has passed forty-four ounces of urine; albumen undiminished; hyaline casts found for the first time. Specific gravity 1.015. September 25th, he passed fifty-four ounces. Since then he has not taken so much fluid. The heart's dulness is increased downward and to the left. Pulse 120, feeble.

The patient's habits before his illness have been good. He has not been a drinker. For some time before he had slept in a damp, cold, partly underground room.

Gentlemen: We have before us, I need hardly say, a severe case of chronic nephritis. Seven months ago this man was first taken ill with symptoms on the part of the alimentary canal, anorexia, nausea, and vomiting. How many cases of this kind show symptoms of this character, which are diagnosticated and treated as simple cases of gastric catarrh. This is, perhaps, proper enough in the majority of such cases, but when the case does not yield to this treatment, we at once should think of two conditions as explaining the nature of the case, namely, tuberculosis and Bright's disease. Tuberculosis we could exclude in this case, not because of the absence of cough, for some cough exists, but because the cough is found to arise from œdema of the lungs. Then, what would first lead us to suspect Bright's disease in this case, is the fact that this man suffered from persistent violent headache. The first symptoms to show themselves in these cases are generally headaches, neuralgias, more or less vertigo, and œdema of the lower eyelids in addition to the disorders of digestion which we have already noticed.

Let us consider the dropsy which plays such a prominent rôle in his history. In order to understand this subject we must transport ourselves to the early part of this century. At this time dropsy was treated as a distinct malady. Now, nobody thinks of treating dropsy as a disease, it is known to be merely a symptom. In the present case, as in most cases, it was not the first symptom presenting itself, but followed others fully as important. First of all, there were disturbances of digestion. A disturbance of digestion characterizes more or less every case of Bright's disease. The case before us is an exceptional one, in the fact that the individual has had a good appetite during the whole course of the disease. One of the most distressing

symptoms you will have to treat in Bright's disease is obstinate vomiting, both dyspepsia and emesis being so often dependent upon œdema of the alimentary canal. Next in this case, as you heard in the history, there showed itself a headache. Headache has been a prominent symptom of the case. The patient has never had convulsions. When you stand in the presence of Bright's disease you will interrogate your patient with reference to three distinct sets of symptoms: the disturbances of the nervous system, the occurrence of dropsy, and the condition of the urine. The only nervous manifestation this man has shown is headache. There has never been any disturbance of vision. Sometimes these patients present themselves to the oculist first to be treated for blindness. An examination of the fundus oculi in these cases will sometimes establish the diagnosis. The oculist sees by the side of dilated veins white patches or stripes about the optic disk associated often with minute patches or rather stripes of a dark color due to hemorrhage. The white spots are believed to be a fatty degeneration. Sometimes there is an absolute amaurosis without discoverable lesions, but this is not so common in this form of disease as in the shrunken kidney to which it properly belongs. But this man has never had any but trivial symptoms on the part of the nervous system; and the fact that the nervous symptoms in this case have been conspicuous by their absence speaks for the particular form of Bright's disease before us. We have here the chronic parenchymatous form of the disease; it is more in the acute parenchymatous, the cirrhotic, or the contracted kidney that the nervous symptoms predominate. Moreover, this individual has never had any asthma. This same dropsy—to return now to the dropsy with which we started—which is present here in the scrotum to such a degree as to interfere with micturition, as you see and as we have heard in his history, is present also in the course of time in the lungs, and from this cause the individual suffers from dyspnœa. We see asthma most marked, however, in those cases in which there is very little or no dropsy. That is the true renal asthma, nervous in its origin. We might say of the nervous symptoms that they show themselves in inverse proportion to the dropsy. Dropsical accumulations seem to serve the purpose of reservoirs into which the noxious elements are eliminated. Although the individual becomes helpless and suffers great distress by the occlusion of the lungs, it is merely a mechanical occlusion. The noxious elements find their escape not through the urine, but into the serous sacs and into the lungs. Other things being equal, then, we say that the immediate prognosis is rather more favorable in those cases which show us a great deal of dropsy. Sometimes, however, the dropsy causes serious phenomena, as when it swells up the vocal cords to occlude the air-passages, or sometimes it accumulates so greatly in the serous sacs and lungs as literally to drown the patient in his own fluids.

Many a patient will come to you to be treated, first of all, for dropsy. He will show you his feet. He will say that in the morning when he gets up the swelling is gone and he can walk, but that it comes again during the day. Other cases will have their attention first called to the disease by the œdematous condition of the lower eyelids. As a rule, however, the swelling first takes place about the feet. Sometimes you will be able to notice it about the loins, especially in individuals who are confined to their beds, though you may by no means explain the localization of the dropsy by gravity. If a man presents himself for your opinion with a sallow skin, with puffy eyelids, and says that he has headache, you at once examine his urine; at once you suspect Bright's disease. The amyloid kidney may also present some of these symptoms, but it generally shows no dropsy, or but little, throughout the entire course of the disease. In parenchymatous nephritis, however, it is the rule. The acute form, especially that following scarlet fever, shows it, and the chronic form always shows it. This great accumulation of fluid is characteristic of the acute and chronic forms of parenchymatous nephritis. You can generally distinguish between these two forms of the affection by the symptoms which accompany the dropsy. The fact that this individual has had the disease so long, that he has had few nervous symptoms, but has had great dropsy, even invading the lungs to such an extent as to render orthopnœa a necessity, bespeaks this form of the disease.

We might be willing to make a diagnosis and to rest our treatment upon these points alone, but there is a third cardinal factor—one which is equally important with any of any of the others and which is sometimes the sole index of the character of the affection. The urine is a fluid which comes directly from the seat of the disease. The quantity which is passed in this form of nephritis fluctuates. This man is now passing forty-four ounces of urine in twenty-four hours. He has passed as high as seventy-two ounces, however, as you have heard in the history. That was when his heart was strong in its hypertrophy. Three pints we say is the average quantity which a healthy man should pass in twenty-four hours. The specific gravity in this disease is high; it varies from 1.020 to 1.030—you might put down the average at 1.025. The first point to notice in connection with the urine is that it is generally reduced in quantity. With this reduction you would expect a change of color, it is darker, and it is also more or less turbid. Slight agitation produces froth. From this alone you might suspect that it would contain albumen, although this would by no means be a sufficient test. After the specimen has remained stationary for a little while there will be a sediment. This sediment is not the healthy sediment of urates; it has not the red color of the urates, but is of a whitish, muddy color. I now we put a little of this sediment under the microscope, we will find that it is made up of the detritus of blood corpuscles, much more of the white than red, and more especially of fat granules. After examining into the gross appearance of the urine the next thing is to inquire whether the urine contains albumen. We will subject a little of this specimen to the test of heat and nitric acid. We will have the urine boiled and then add a little nitric acid; if albumen is present, it will, of course, coagulate. If, however, there is a coagulation, does that necessarily mean that we have Bright's disease to deal with? By no means. We have a physiological albuminuria which is not connected with Bright's disease. There are certain other conditions which produce albuminuria. Pressure on the thorax will produce abundant albumen in the urine. The urine of a newborn child always con-

tains albumen, probably on account of an interference with the circulation of the blood in the thoracic cavity. Fever, and any retardation of the circulation will show it. I have said that there is a physiological albuminuria; so there is, but it is seldom encountered, is transitory, and the albumen is present, except in the pressure cases referred to, only in very slight quantity. Albumen in any quantity always indicates some disturbance of the epithelial cells of the kidney. These cells have the function of preventing the exosmosis of albumen; but if they become diseased in any way, only cloudy or opaque, they will permit the escape of albumen; you may put it down as a law that albumen in the urine in any quantity means disease of the kidney.

In executing the test for albumen, it is best to heat only the upper stratum of the liquid in order to discern by comparison the presence of only a small quantity; the boiling process should be continued at least one minute. Again, you should take a sample from all the urine that is passed in twenty-four hours, for in that space of time you will be more certain to find albumen if there be parenchymatous disease of the kidney. Sometimes, after heating—that is, boiling, I repeat, and adding nitric acid you will find that the contents of the entire test tube set into clot. You may then hear it stated that the urine was all albumen, or that it contained 50 per cent. of albumen. This is a mistake, for if it sets solid in the test tube, it indicates only 5 to 7 per cent. You must always take the precaution to add nitric acid to it as well as to boil it. It matters little which you do first, but you must always do both. Then, it is best to add quite a quantity of nitric acid—from one-tenth to one-fifth of the volume of urine to be tested.

There are a great many varieties of albumen. There is a serum albumen, there is a peptone albumen, a propeptone, and a globulin, and there are occasionally met other albumens which we are just beginning to recognize. Only two of them, however, have practical significance as yet; one is serum albumen and the other peptone albumen. The peptone albumen has nothing to do with Bright's disease. It never occurs in Bright's disease. It indicates to us that there is suppuration present somewhere in the body. It indicates to us sepsis that we can sometimes find in no other way. It is of value in the diagnosis of ulcers of the intestine, inflammations of the lung, and cerebro-spinal, as distinct from tuberculous meningitis.

There are many tests for albumen, but this heat and nitric acid test is sufficiently accurate if properly made. The mistakes which occur are for the most part in cases not examined at all. Boil the urine and see that it has an acid reaction; add plenty of acid.

The quantity of albumen is not indicative of the gravity of the disease. Most of the cases of acute parenchymatous nephritis or chronic nephritis show large quantities of albumen, but a case of cirrhotic kidney may disclose no albumen in even a dozen examinations, so that if you rely upon albuminuria only you will often be deceived. Suppose you have albumen, the question then is, Does this albumen come from the kidneys? Is the case one of renal albuminuria, or is it one of accidental albuminuria? Does it come from the kidney or from some other source? Does it come from the pelvis of the kidney, from the ureter, or from the bladder? Cases of accidental albuminuria distinguish themselves by the presence of pus, as a rule, and albuminuria due to affections of other parts distinguish themselves by the presence of epithelial cells from these parts, disease of which shows other signs. Albuminuria from the kidney is generally distinguishable by the great quantity of albumen as well as by the presence of tube casts, fat granules, and epithelial cells or débris. The presence of fat is valuable, but not so valuable as the presence of tube-casts. We have in most cases the granular, fatty, and epithelial casts, but in many cases we find only clear hyaline casts, such as are exhibited here under the microscope.

We have now interrogated this patient from three standpoints; namely, the nervous system, the dropsy, and the urine—the latter with reference to changes in its quantity, color, and composition. We find in it albumen, fat granules, and hyaline casts. The diagnosis is clear.

How Bright's disease came to attack this man we do not know. Some cases of chronic parenchymatous nephritis do follow the acute form of the disease, follow scarlet fever or some other acute infection, but only a small minority of cases are of this origin. Most cases are chronic from the start. The individuals begin gradually to suffer malaise. They feel low spirited, as a rule, suffer occasional headache and vertigo; then disturbances of digestion occur; and, finally, the patient presents himself to a physician, who examines his urine, to find in it the peculiar features mentioned, and be the first to recognize the disease. It is said that malaria and syphilis are diseases which often result in chronic Bright's disease. We know that individuals who suffer from malaria and syphilis are not infrequently affected with this disease; but you will find that most cases of Bright's disease cannot be ascribed to either of these affections, or to any cause, in fact, except to cold. Whether the cold is really the cause, or whether it is only the exciting factor acting with some other cause which existed previously in the body, we do not know. This much we know, however, that the microörganisms of the acute infections do not escape through the kidney, if the kidney be sound. They are not locked up in the kidney as they are in the liver, spleen, and bones. But they may be liberated from a latent state in these organs to affect the kidney at a later date, on or after long-continued or insidious exposure to cold.

The prognosis is always grave. We base our prognosis largely upon the length of time that the disease has lasted. If the individual has had the disease only a year, we may say that he has a good chance to recover. The average duration of the disease runs from a year to a year and a half. Many cases last longer under favorable hygienic surroundings, and some are cut short even in a few months. These patients are not so likely to die suddenly as those who suffer from the cirrhotic kidney. Patients sometimes fall down comatose in the latter affection, without having ever shown any symptoms of the disease. If you interrogate these cases, however, you will find that the individuals have been ill with vague feelings of distress, feeling below par, as they say, for some time; though not sufficiently so to take them to the office of a physician for advice. You must examine the urine in these cases. If necessary, draw it off with a catheter. A little albumen may be present in any case of coma, so that you

must look for fat granules and tube-casts, whereby you make your diagnosis. Look also in all cases for hypertrophy of the heart.

The prominence of nervous symptoms makes the prognosis grave. Fatty tube-casts, much fatty matter, will indicate a very pronounced form of the disease. The prominence of nervous symptoms is more apt to occur when the disease has passed over into the shrunken form—not into the true cirrhotic form, but into that shrunken condition peculiar to this form of the disease. The danger in this man's case is the increase of the dropsy over which we have so little control. He has twice had dyspnœa, from which he narrowly escaped. You heard in his history that the man has an enlargement of the heart. Some of the most brilliant diagnoses you will ever be able to make will be when you put your finger on a man's pulse and thereby be able to say that man has kidney disease. We find that the left ventricle is hypertrophied. We recognize it by the displacement of the apex beat, by percussion, by the firmness of the pulse, and by the accentuation of the aortic valve sounds. As long as these symptoms are present, there is no particular danger, but after awhile a time comes when the left ventricle begins to flag; the blood accumulates in the left ventricle, in the lungs, in the right ventricle, which flags in turn, and, finally, as the walls of the heart give way, the heart becomes fatty and flabby, and the individual soon succumbs. I give it to you as a sign of the utmost value, that in every case of chronic parenchymatous nephritis, you will find hypertrophy of the heart.

The prognosis in this case is very grave; but the patient has been almost as bad as he now is several times before and partially recovered. I am sure that every one of the older practitioners present have seen cases of Bright's disease quite as bad as this one that got better; but not, as a rule, to the point of a complete recovery.

What is the treatment here? You might naturally think that the proper treatment in such a case would be to push more water through the kidneys to wash out the tubules. So it would be if the tubules were open, but they are closed; they are plugged, and if you attempt to force more water through you will only increase the hyperæmia, stasis, and stagnation which are always present at this stage. In this case there is one diuretic which is indicated, namely, spartein, on account of the weakness of the heart. We shall give this patient one-sixteenth of a grain of the sulphate of a spartein every four hours, not for the disease of the kidney but for the heart.

This is not the true treatment of Bright's disease, however. It is, as a rule, the worst. The true treatment is to substitute the action of the kidneys by the action of the skin. The individual should have a hot bath every evening up to 110° F., remaining in it a long time, half an hour to an hour, then be rolled up in blankets and made to sweat. A patient who will do this right will often get entirely well. The man must have a large bath-tub made. He must have a thermometer in it. The temperature of the water must be kept up by the addition, from time to time, of hot water, beginning with 100° F., and gradually increasing to 110° F. This remedy, which proved to this man of the greatest advantage in the early part of this disease, is now valueless; his heart has become too weak for it. At one time I saw him after a bath, weak and almost pulseless. He was only tided over by hot coffee and brandy. Another most valuable agent in this case is pilocarpine, the active principle of jaborandi. It is given to him in the dose of a quarter grain, administered subcutaneously, increasing it, if it does not produce depression, to a third of a grain, or at times to a half grain. One-third of a grain shows its effect on this patient in fifteen to twenty seconds. He expectorates a half a basin full of saliva in the course of the ensuing half hour, and perspiration stands out in beads and drops, and rolls from his face in streams. He gets such complete relief from its use of the dyspnœa that he pleads for it at times. But pilocarpine is not as curative as the hot bath when it can be sustained. It is a substitute, and, like all substitutes, is not as good as the original. That we keep this patient in bed, and that we allow him no albuminous food need not be said. But with all the relief we may afford him we cannot at this stage sufficiently fortify his heart to prevent the dropsy. We have had subsequent occasion to incise his legs, whereby great quantities of water have found escape, and the persistence of this condition, in spite of all this treatment, shows how extensive is the block in the kidneys. In this operation incision with a bistoury is much to be preferred to punctures with a needle, in that it is less liable to show subsequent inflammation. It is no exaggeration to say that gallons of water have been drained from this patient in this way with corresponding relief of his dyspnœa, which is now his chief distress.

I give you thus the practical points as befits a clinical lecture bearing upon the recognition and treatment of chronic Bright's disease, and with special reference to this individual case. We may not be able to cure the disease in this case—indeed, I believe we will not, for I have come to make my prognosis rest largely upon the tolerance and effects of hot baths, which he cannot now endure. The symptom which now assumes prominence and most seriously threatens life is the dropsy due to the weakened heart. So soon as his stomach will bear it we will give him digitalis—the fresh infusion—in tablespoonful doses every two or three hours. We shall add to its efficiency by adding to it the acetate of potash fifteen grains to each dose. It is well to know, however, that with this addition the preparation does not keep so well, so that four to six ounces should constitute the maximum quantity made at any one time.

ORIGINAL ARTICLES.

FOUR CASES OF POISONING FROM TYROTOXICON, WITH THREE FATAL RESULTS.

INVESTIGATIONS AS TO THE ORIGIN OF THE POISON; RESULTS OF THE AUTOPSY AND CHEMICAL ANALYSES.

BY VICTOR C. VAUGHAN, M.D., PH.D.,
DIRECTOR OF THE HYGIENIC LABORATORY IN THE UNIVERSITY OF MICHIGAN.

SEPTEMBER 23, 1887, I was visited by Dr. A. G. Mesic, of Milan, Michigan, who informed me that he had four members of a family under his charge, all of whom were seriously ill with peculiar symptoms, which he believed to be caused by tyrotoxicon.

Since Dr. Mesic has written out for me the history of these cases, I will insert his report in full, as follows:

"*Saturday, September 17*, while passing the residence of S. H. Evans, a respectable farmer, I was called in to see him. I found him—a man of about fifty years, spare and muscular—vomiting severely, with flushed face, but with a temperature of 96° F. There was marked throbbing of the abdominal aorta; the tongue had a white, heavy coating, and the breathing was very labored. I set to work with the ordinary remedies to allay the vomiting, which had already continued for some hours. The vomited matters were colored with bile. Pupils were dilated, and a rash resembling that of scarlatina, but coarser, covered the chest, forearms, and legs below the knees, while the abdomen and thighs remained unaffected. As the bowels had not been moved since the beginning of the attack, I administered a purgative dose of calomel with a little podophyllin and rhubarb. On Sunday a small stool resulted. During that day and night, and the following day, the retching and vomiting continued. Small doses of carbolic acid seemed to give the most relief. After the movement of the bowels the symptoms were somewhat more promising; but a heavy and unfavorable stupor was observable and persistent.

"On *Sunday* the coating of the tongue remained very thick, and had changed to a dark brown color. At first I thought that his symptoms indicated a depressed condition, which I had known in one instance to precede typhoid fever. However, after a few days, I concluded that I must look for the cause of the condition among the poisons; but I could think of no one poison which would be likely to produce all the symptoms observed. During Monday, Tuesday, and Wednesday there was but little change, and the treatment was continued.

"On *Thursday* morning I found the son Arthur, a lad of eighteen years, strong and vigorous, suffering with the same symptoms, only in a more violent form. After supper on Wednesday evening, he was taken with nausea and vomiting. He had no rash, but the symptoms were otherwise identical with those of the father, except in being more severe. I gave a cathartic, which acted only slightly.

"At my evening visit I found Mrs. Evans, a lady of about forty-five, previously in good health, with the same symptoms. In this case the stupor was more marked from the first. I was unable at any time to obtain any cathartic action in this case. Copious enemata of warm water were used, but succeeded only in washing some hardened lumps from the rectum. By this time I had concluded that the poison was most likely tyrotoxicon.

"On *Friday* morning the only remaining member of the family at home, Miss Alma, sixteen years of age, was affected in the same way as the others. On that day I went to Ann Arbor, and gave a history of the cases so far to Dr. Vaughan, who, from the symptoms, thought that my diagnosis was most probably correct, and he advised with me as to treatment, which I carried out. I gave two grains of sodium salicylate every four hours, and used small doses of the tonics and stimulants, quinine, nux vomica, digitalis, whiskey, and the aromatic spirits of ammonia. On Saturday the symptoms in all remained unimproved, and in the mother and son the stupor and labored breathing grew more marked.

"On Sunday, I again went to Ann Arbor, and brought Dr. Vaughan with me to see the patients. The temperature of the mother on Sunday was as low as 94°, and that of the son 95°. Dr. Vaughan agreed with me as to diagnosis and treatment. Sunday evening the patients were all removed to the house of a neighbor, about forty rods distant (the reasons for this will be given later). Dr. Vaughan and I both expressed the fear that the mother, and possibly the son, would not live through the night. Both of these rapidly grew worse, and the son died at 7.45 A.M., and the mother at 4 P.M., Monday.

"During *Monday* the daughter rapidly grew worse, and at the time of her mother's death could not be aroused, and practically she remained unconscious from that time on. The father was very weak, but retained his consciousness all the time. Convulsive movements of the limbs had been noticed in the son, but not in the mother. These now became more marked in the daughter, who remained in the heavy stupor, with labored breathing, until 5 P.M. Thursday, when she died.

"Mr. Evans has slowly improved, and now, October 18th, is able to walk about the room. The sodium salicylate, even in the small doses used, seemed to cause severe headache; so apparent was this that the drug was discontinued, and drop doses of amyl nitrite, given every hour, seemed to relieve the pain in the head. The father's temperature remained below the normal until Thursday, October 14th, when it reached the normal. After this it was found once as high as 99.5°, then 99°, then again normal, where it remains."

"All complained of a burning constriction in the throat, and difficulty in swallowing, and all, as long as they were conscious, frequently called for ice. In all the pulse was rapid and feeble, and death seemed to result from failure of the heart. Those who died voided urine involuntarily, while Mr. Evans passed small quantities frequently, and for this some buchu and uva ursa were given. During his convalescence some small doses of morphine were given to the father, as he was unable to sleep, and became very restless. He is now taking teaspoonful doses of the elixir of calisaya and iron every four hours."

As stated above by Dr. Mesic, I first saw these patients Sunday, September 25th. On a sofa in the room we found the daughter, Alma. She had been vomiting during the day, and seemed much exhausted. She was not inclined to talk, and seemed to be in a stupor, though when spoken to, she responded rationally. Her pupils were slightly dilated, her tongue coated, her pulse 120 and weak, her face flushed, and a violent throbbing could be felt over the abdomen, which was retracted. Her temperature was 96°.

In another room were the father, mother, and son, two of them dying. The father was rational, and talked with some freedom when I asked as to the kind of food they had been eating, etc. His pupils were normal. His face could not be said to present any peculiar feature. His pulse was rapid, breathing somewhat labored, and the throbbing of the abdominal aorta was plainly felt. The abdomen was retracted, and there was no pain on pressure. He complained of a burning constriction of the throat, swallowed with difficulty, and said that his throat and stomach felt as though they were on fire.

The mother lay perfectly still with eyelids closed, as if in a deep sleep. Her pulse was rapid, her face had a livid flush, her breathing was about 35 per minute, and labored. The skin was cool, but neither abnormally moist nor specially dry and harsh. She could not be aroused. In fact, she was comatose.

The son rolled uneasily from one side of the bed to the other. His breathing, also, was very labored.

His eyelids were closed, and the pupils were markedly dilated—did not respond to light. He could not be aroused. In mother and son, as well as in father and daughter, the abdomen was retracted, and the throbbing of the abdominal aorta was easily felt.

Now, to what were these symptoms due? They were certainly those of some poison. Dr. Mesic had brought me some of the vomited matter, which I tested thoroughly for mineral poisons, with negative results. The symptoms certainly were not those of morphine, strychnine, digitalis, or aconite. They did have some resemblance to those of belladonna, but yet they were not the symptoms of belladonna. The pupils were not as widely dilated as they would be in belladonna poisoning. There was in none of these persons the active delirium of belladonna poisoning. There was no picking at the clothing, no grasping of imaginary objects in the air, no hallucinations of vision. Surely it could not be any vegetable alkaloid with which I was familiar.

On the other hand, we know that nausea, vomiting, headache, dilatation of the pupil, rapid pulse, heavy breathing, constipation, and great prostration, with stupor, do occur in cases of poisoning with certain ptomaines. Therefore, we began to look for conditions which would be favorable for the production of putrefactive alkaloids. These conditions we were not long in finding.

The family, which consisted of the four persons sick, and of a daughter, about twenty years of age, who was away from home at the time when the others were taken ill, and for some months before that time, was evidently a tidy one. This was shown by their personal appearance, and by the clothing and bedding. But the house in which they lived was very old and very much decayed. Mr. Evans had purchased the farm six years ago, and for some three years past, at least, they had been troubled every now and then, one or more of the family, with nausea and vomiting, followed by more or less prostration. But in no instance, up to the present illness, had the symptoms been sufficient to cause them to summon a physician. The family had worked hard in order to pay for the farm, and had determined to make the old house do until they were out of debt. Even before this family had moved to the farm, the house had been known among the neighbors as an unhealthy one, and there had been much sickness and a number of deaths among its former tenants.

The house is a frame one, and one of the neighbors said to me that it was an old house when he came to the neighborhood thirty-seven years ago. It consists of two rooms on the ground-floor, with attic rooms above. The frame rests upon four large logs or sills, which lay directly upon the ground, and are thoroughly rotten. There is no cellar under any part of the house. From the front, at least, the surface slopes toward the house, and the rain water runs under it. In the floor of one room a trap-door had been placed, and directly under this a small excavation had been made for the purpose of collecting the rain water when it accumulated under the house. Although this pit was dry at the time of our examination, its sides and bottom were marked with cray-fish holes, showing that water had stood in it. The floor was laid of unjointed boards, and every time that it was swept much of the filth fell through the cracks, and everytime that the tidy housewife scoured and mopped the floor, the water, carrying with it the filth, ran through the crevices, and thus the conditions most favorable for putrefactive changes were brought into existence, and maintained.

One corner of one of the rooms had been transformed into a small room, or buttery, as it was called, and in this, on shelves, the food was kept. On account of the more frequent scouring demanded by that part of the floor enclosed in this buttery, the boards had rotted away, and a second layer of boards had been placed over the original floor. Between these two floors we found a great mass of moist, decomposing matter, the accumulations of years, which the broom could not reach. When this floor was taken up a peculiar, nauseating odor was observable, and was sufficient to produce nausea and vomiting in one of the persons engaged in the examination. Some of the dirt from beneath the floor, and some of that which had accumulated between the boards in the buttery were taken for further study.

The condition of the house was supposed to be unfavorable to the patients, and for this reason they were moved, as Dr. Mesic has stated, to the house of a neighbor. Of course, thorough examination of the house was not made until the patients had been removed.

Special inquiry was now made concerning the food used by this family. They had been living very simply. They lived upon bread, butter, milk, and potatoes, with coffee and ripe fruit. They had eaten no canned foods for months. They ate but little meat. Occasionally a chicken was killed and served, and rarely, some fresh meat was obtained from the village. During the week in which they were taken ill, all the meat used consisted of slices from a piece of bacon, the only meat which was kept in the house, and a chicken. None of the latter remained, but the bacon was examined. It seemed in perfect condition and contained no trichinæ. Moreover, as has been seen from the history of the cases, all the members of the family were not made sick by any one meal, but the opportunity of obtaining the poison must have been present for some time. Moreover, the fact that previous similar, but less severe attacks had occurred at intervals for the past three years convinced us that the poison must owe its origin to some long existing condition.

The drinking water supply was also investigated. The water was obtained from a shallow well, and some of it was taken for analysis. But several families had for years used water from this well, and had remained healthy.

The milk used by the family was studied. Of course, we could get none of that which had been used before the members of the family were stricken down. As soon as he made the diagnosis of tyro-

toxicon poisoning, Dr. Mesic ordered the discontinuance of the use of milk, not only with the sick, but he forbade the daughter, who had returned, and any of the visitors using it. Mr. Evans owned four milch cows and they were supplied with fair pasturage and abundant water. The greater part of the milk was placed in tin cans which were set in a wooden trough in the yard, and surrounded by cold water. The covers to the cans were arranged so that the air could have free access to the milk, and were left in this position until the milk was thoroughly cooled. Indeed, the cans were furnished by a creamery company, which followed the directions which I have previously given for the care of milk. On his first visit to me, Dr. Mesic brought some of the milk from one of these cans. This I examined, but failed to find tyrotoxicon in it.

However, the family did not drink any of the milk from the cans. That which they did use was kept in the buttery which I have described. Here it stood upon a shelf and some members of the family at least were in the habit of drinking from it between meals. This was especially true, it is said, of the son. He would frequently come from his work in the fields, go into the buttery and drink a glass or more of the milk. Mr. Evans states that he frequently observed that the taste of the milk was not pleasant. On my first visit to the premises, I advised that some milk should be taken from the cans, allowed to stand in the buttery over night and be sent to me the next day. This was done and in this milk we found tyrotoxicon not only by the employment of chemical tests, but by poisoning a kitten with it.

On the death of the mother and son, Dr. Mesic asked for a post-mortem, but the friends objected, and the undertaker used an arsenical embalming fluid, so that, although consent was subsequently obtained, it was decided that the examination would be so vitiated as to be worthless. On the death of the daughter, Dr. O. C. Jenkins, the coroner, summoned a jury and held an inquest. The post-mortem was conducted by Dr. George A. Hendricks, in the presence of the jury and several physicians who had been invited. Dr. Hendricks has kindly furnished me with his report, which I present here in full:

"The autopsy was held fifteen hours after death. The abdominal viscera were first examined. The great omentum was small, in normal position, covering the small intestine. The small intestine was moderately distended with flatus. The jejunum was ashy-green in color; the ileum purplish-green. About eighteen inches from the termination of the ileum was found a diverticulum two inches in length. The small intestine contained very little alimentary matter. The vermiform appendix was free, contained some small fecal lumps, and showed no evidence of any inflammation. The cæcum, ascending, transverse, and descending colon, were empty and their circular fibres were tightly constricted, except at intervals where the intestine was distended with gas. The sigmoid flexure was moderately distended with gas, and the rectum contained small bits of fecal matter. The stomach was somewhat contracted and lay wholly upon the left side of the median line. It contained a few ounces of fluid. Its extremities were ligated and the organ removed. The mucous membrane of the stomach and intestine were not examined until they reached the chemist. The duodenum was distended with flatus. The liver was normal in size and appearance. The gall bladder contained about one ounce of bile. The spleen was normal. One-half ounce of fluid deeply stained with blood was found in Douglas's cul-de-sac. The uterus, Fallopian tubes, and ovaries were deeply congested. The left ovary was enlarged and presented on its posterior surface a hemorrhagic spot, oval, about one-half line in length, and several other less distinct ones. The right ovary was normal in size and showed numerous Graaffian scars. The ureters and bladder were normal; the latter contained a small amount of urine. The peritoneum, pancreas, and kidneys, were perfectly normal.

The thoracic cavity was next opened. The lungs were normal; there was about one-half ounce of free serum in the left pleural cavity; none in the right. Pericardium normal; right auricle in diastole; left auricle and both ventricles in systole.

The dura mater showed venous congestion; the arachnoid normal; the pia-mater congested. On the surface of the centrum ovale, small drops of blood oozed from the divided vessels. The large veins of the velum interpositum were distended. Third and fourth ventricles were slightly distended with serous fluid, but the walls were normal. There seemed to be slight softening of the optic thalami. The sub-arachnoid fluid was about twice the normal quantity.

On examination of the mucous membrane of the stomach and intestine in the presence of the chemist, Prof. A. B. Prescott, nothing abnormal could be found. The membrane was stained with bile, but there was not the slightest redness The solitary glands were distinct, but not at all inflamed. Peyer's patches were normal.

It will be seen that there existed no lesion which would account for the death. The venous congestion observed in the brain would follow from failure of the heart.

Some of the post-mortem appearances bore a striking resemblance to those which I had observed in cats poisoned with tyrotoxicon. This was especially noticeable in the condition of the mucous membrane of the stomach and intestine. Tyrotoxicon produces the symptoms of a gastro-intestinal irritant, but not the lesions. The contraction of the circular fibres of the intestine, which undoubtedly caused the constipation, I had also observed in cats that died from tyrotoxicon poisoning without either vomiting or stool. The action of this poison upon the stomach and intestine must be through the nervous system. Small doses cause both vomiting and purging, while after large doses vomiting may be impossible, and obstinate constipation may exist. Both the vomiting and purging after small doses are undoubtedly due in part to increased activity of the circular fibres of the muscular coats, induced through the nerves; and the inability to vomit, and the constipation, one or both of which may be observed after large doses of the poison, are due to spasm of the same muscles, induced in the same manner.

Prof. A. B. Prescott was requested by Coroner Jenkins to analyze the material for mineral and vegetable poisons. He made analyses of the stomach and part of its contents, and a portion of the liver. His results were wholly negative.

Mr. F. G. Nooy tested a cold-water extract of the

finely divided intestine for ptomaines. The fluid, which was acid in reaction, was filtered, then neutralized with sodium bicarbonate, and shaken with ether. The ether, after separation, was removed, and allowed to evaporate spontaneously. The residue was dissolved in water, and extracted again with ether. This ether residue gave the chemical reactions for tyrotoxicon, and a portion of it was administered to a kitten about two months old. Within half an hour after the administration the kitten began to retch, and soon it vomited. Within the next three hours it was noticed to vomit as many as five times. The breathing became rapid and labored. The animal sat with its head down, and seemed greatly prostrated. The pupils were examined, but could not be said to be dilated. There was no purging. The retching and heavy breathing, with evidences of prostration, continued more or less marked for two days, after which the animal slowly improved.

A quantity of fresh milk was divided into five portions of one quart each, placed in quart bottles which had been thoroughly cleansed, and treated in the following manner:

No. 1 consisted of the milk only, and was employed as a control test.

No. 2 was mixed with a drachm of vomited matter.

No. 3 was treated with a portion of the contents of the stomach.

No. 4 was treated with an aqueous extract of the intestine.

No. 5 was treated with a small portion of the soil, which had been taken from the floor of the buttery, stirred up with water.

These bottles were placed in an air-bath, and kept at a temperature of from 25° to 30° C. for twenty-four hours. Then each was tested for ptomaines. No. 1 yielded no tyrotoxicon, while all of the others contained this poison. The tests were both chemical and physiological. All of the samples yielded a non-poisonous base when treated according to Brieger's method, and the same substance was obtained from perfectly fresh milk. It is most probably formed by the action of the heat and reagents employed in this method. This base was obtained in crystalline form, and several portions of it were administered to kittens without any effect. The further study of this body will be of interest to toxicologists, because it gives many of the general alkaloidal reactions. At first we supposed it to be Brieger's neuridin, and this supposition may still be correct, but, as we obtained it, it gave some reactions which are not given by neuridin. Further investigations will be made on this point.

Tyrotoxicon was obtained from the filtered milk by two methods: (1) The one which we have previously used, and which consists in neutralizing the filtered milk with sodium bicarbonate, and extracting with ether. That portion of the poison employed in the physiological tests was obtained in this way, and in order to be sure that no poison came from the ether, the extract from the milk to which nothing had been added was given to a kitten, and was found to produce no effect. (2) The filtrate from the milk was heated to 70° C. (158° F.) (tyrotoxicon decomposes at 91° C. (195.8° F.)) for some minutes, and filtered. This filtrate, which was perfectly clear, was treated with a small quantity of nitric acid in order to convert the tyrotoxicon into a nitrate, then pure potassium hydrate in the solid form was added until the solution was strongly alkaline. This solution was concentrated so far as it could be, on the water-bath. (The potassium compound of tyrotoxicon is not decomposed below 130° C. (234° F.).) The dark brown residue, after cooling, was examined with the microscope and found to contain the crystalline plates of tyrotoxicon-potassium hydrate, along with the prisms of potassium nitrate. The former was separated from the latter by extraction with absolute alcohol and filtration. The alcohol was evaporated to dryness on the water-bath, and the residue again extracted with absolute alcohol. From this alcoholic solution tyrotoxicon was precipitated with ether. The precipitate was decomposed by adding acetic acid and heating, the tyrotoxicon being broken up into nitrogen and phenol. The phenol was recognized by precipitation with bromine water, and by other well-known tests.

On October 8th, the coroner's inquest, which had been adjourned after the *post-mortem*, in order to await the results of the analysis, was resumed, and after hearing the testimony in accordance with the above stated facts, the jury returned a verdict of death from poisoning with tyrotoxicon.

Ehrhart has recently published the history of some cases of poisoning from cheese, of which the following is an abstract: The family of a workman, consisting of eight persons, ate for supper 600 grammes (about 18 ounces) of Limburger cheese. The rind was covered with a heavy mould, while the interior had become fluid from putrefaction, and was of bitter taste. Three ate only of the mouldy rind, and these remained well. The next morning, the five who had eaten of the inner portion suffered from vertigo, nausea, vomiting, and abdominal pains; no stool. The father had convulsive movements of all the extremities. The pupils were dilated, and did not respond to light; there were double vision, cold sweat, skin cyanotic, abdomen distended, difficulty in swallowing, delirium, mild trismus, and temperature 40° C. (104° F.). The temperature of the mother, on account of the great collapse, was subnormal. She had no convulsive movements, but there was prolonged loss of consciousness. The pulse was small and thready, and threatened paralysis of the heart. Recovery was very slow. The others suffered only from gastro-enteric symptoms. Ehrhart discussed the question as to whether these symptoms were due to tyrotoxicon, or to infection with microorganisms; but as I have not had access to his original paper, I do not know what his conclusions are. (*Schmidt's Jahrbücher*, B. 213, S. 248.) However, there cannot be much doubt that in those cases in which the organism is taken into the alimentary canal, it continues the elaboration of its poisonous products.

There is one other point to which I will only refer at this time. It seems now that small doses of tyrotoxicon, especially when repeated, elevate the

temperature. This is probably due to peripheral irritation, which is a common cause of elevation of temperature. On the other hand, fatal doses cause depression of temperature from collapse.

REPORT OF A CASE OF WLADIMIROFF-MIKULICZ OSTEOPLASTIC RESECTION OF THE FOOT.[1]

BY WM. BARTON HOPKINS, M.D.,
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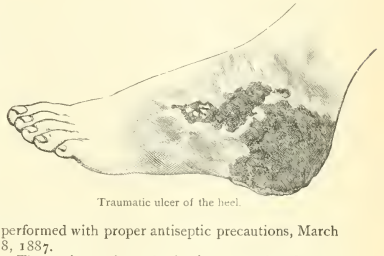
THE operation which is the subject of this report was originally designed by a Russian, Dr. W. D. Wladimiroff in 1871, but as he published the account of it in his own language, it was not known out of Russia until nine years afterward. In 1880 Dr. John Mikulicz, of Vienna, performed the same operation and published it as his own device, not knowing that it had ever been done before.

Wladimiroff called it the operation for the production of artificial pes equinus; Mikulicz, the osteoplastic resection of the foot. The toe-stump operation would probably still better distinguish it. It consists essentially in removing the entire heel and ankle-joint and applying what remains of the foot to the leg in a position of pes equinus, so that the patient walks on his toes. The conditions for which it has been performed are (1) caries of the larger tarsal bones, and (2) extensive loss of the tissues about the heel, either from disease or injury. For the relief of the former it has been almost exclusively practised, and a number of excellent results have been obtained, though there is, of course, the risk of the disease attacking the remaining bones and causing relapse. To the latter class of cases, though of these there are as yet but few examples, it will probably prove more particularly applicable, as in them the tissues involved preclude the conservative operations of Chopart, Pirogoff, and Syme, and leave no alternative but amputation of the leg. Should further experience confirm the observations so far made, that this operation is followed by decidedly better functional results than amputation, its future scope will probably include many cases of railroad, gunshot, and the like injuries, where the parts destroyed correspond with those which by it are removed.

There have been twenty-one cases recorded within the past seven years. Most of these have been successful and most of them for caries. The case reported this evening is only the second in which the operation has been done for injury of the tissues about the heel. The patient's history is as follows: Wm. D., aged thirty-seven, born in Scotland, a strong, healthy man, was admitted to the Episcopal Hospital November 16, 1886. Two months before his admission he had been run over by a freight car. The wheel had passed over his left foot, tearing away the tissues of the heel down to the bone, laying bare the extensor tendons of the toes and leaving an isthmus of sound integument upon the dorsum of the foot not wider, according to the patient's recollection, than an inch and a half. During his stay in the hospital of nearly four months, the ulcer, for which he was admitted, obstinately refused to heal. Its cicatricial border having advanced to the utmost limit of its tensile strength, would repeatedly break down, so that all efforts to facilitate healing failed. The accompanying cut, taken from a photograph of the foot at the time of the operation, shows accurately the position of the ulcer and cicatrix on the outer side. On the inner side the ulcer did not extend quite so far forward. The operation was

FIG. 1.



Traumatic ulcer of the heel.

performed with proper antiseptic precautions, March 8, 1887.

The patient, after etherization, was placed upon his abdomen; the sound leg was flexed upon the thigh and held out of the way by an assistant. The injured foot having been cleansed, was elevated upon a block placed beneath the rubber cloth and a constant stream of sublimate solution from the irrigator directed upon it during the two hours and three-quarters occupied by the operation.

The first step consisted in dissecting out the posterior tibial nerve. An incision started behind the inner malleolus was carried obliquely downward and forward below it to a point below Chopart's joint. The nerve was found to be so deeply imbedded in newly formed, very dense fibrous tissue, that it was dissected out with some difficulty. It was then divided at the upper and lower angles of the wound, about two inches of its length being removed.

The second step in the operation consisted in forming the flaps. These had to be slightly modified by the form of the ulcer, in order that their edges should consist of moderately healthy skin; in most respects, however, the limits of the ulcer corresponded with rather remarkable accuracy to the prescribed lines of incision. The first incision was carried across the sole of the foot, down to the bone, from the tubercle of the scaphoid on the inside to a point a finger's breadth behind the base of the fifth metatarsal bone on the outside; and the second straight across the back of the ankle half an inch above the os calcis, from the external angle of the sole incision to the upper angle of the tibial nerve incision.

The third step consisted in the resection of the astragalus and os calcis, and the shaving off of the lower ends of the tibia and fibula and posterior sur-

[1] Read before the College of Physicians of Philadelphia, November, 1887.

faces of the scaphoid and cuboid. Disarticulation of the astragalus at the ankle-joint was done from behind forward; of the os calcis at its cuboid joint, and the astragalus at its scaphoid joint from below upward. Due care was taken not to injure the dorsalis pedis during the last-mentioned disarticulation, as the position of the ulcer necessitated the division and ligation of the posterior tibial artery in forming the flaps.

The last step in the operation included the approximation of the bones, divided nerve and tendon ends, and the closure and dressing of the wound.

With the view of obtaining more perfect fixation of the tarsus to the tibia and fibula than has heretofore been found possible, two sterilized bone dowels were placed in holes drilled into the lower extremity of the tibia at points which corresponded as nearly as possible to the centres of the presenting surfaces of the scaphoid and cuboid; the insertion of their projecting points into these bones being deferred until the final adjustment of the parts. A very fine catgut suture was so placed in the divided and retrenched ends of the posterior tibial nerve as to bring these ends into very accurate apposition without undue pressure. The slack, however, was not yet taken up. In like manner sutures of stronger gut were introduced into the divided and retrenched ends of the tendon of the peroneus longus, about three inches of which were excised, and into the divided end of the tendo-Achillis, and the edge of the plantar fascia exposed in the lower flap. These sutures were all allowed to remain slack until the foot should be brought into its new position. Moderate pressure was sufficient to accomplish this and to impale the tarsal bones upon the sharp-pointed dowels. With the foot firmly retained in this position, the extremities of the nerve were brought accurately together and sutured. The tendon of the peroneus longus was likewise sutured and the terminal extremity of the tendo-Achillis stitched to the edge of the plantar fascia. The introduction of drainage catgut and suturing the skin flaps with catgut completed the approximation of the parts. A dressing of gauze, iodoform, and sublimate cotton was applied and the limb was placed upon a straight posterior splint. The latter was in three days substituted by a plaster-of-Paris double dressing, the foot and leg sections being connected by an iron bracket anteriorly in order to leave ample room for washing and dressing the wound. Five weeks later a small ulcer remained, but union of the deeper parts was complete and consolidation of the tarsal and leg bones was found to have begun. The patient at this time complained of tingling in the toes accompanied by occasional shooting pains, and there was partial anæsthesia of the sole of the foot. Sensation gradually returned, and is now restored except over a very limited area.

Three months after the operation, under ether, the toes were extended to a right angle; to accomplish which moderate force only was required. Since then there has been nothing to note. The limb continues to gain in strength and the patient can now, with a cane, walk four miles a day. He has had the braced shoe which he wears but two weeks, and has, therefore, not yet had time to become thoroughly accustomed to it. He walks well without a cane, while with one, when not fatigued, he shows hardly a limp. This cut represents the limb after the operation, and was engraved from a photograph on the block.

FIG. 2.

Artificial pes equinus.

Two modifications of the operation, as practised in this case, deserve mention, namely: the employment of bone pegs or dowels to fix the tarsal bones to the tibia, and the suturing of the divided and retrenched tendons. The dowels provided proved rather too light to make the joint firm and immovable, but they were nevertheless used, as heavier ones were not at hand. Perfect fixation of the tarsus and leg at the outset, by lessening suppuration, by promoting early bony union, and by obviating the necessity of such carefully applied outside support, would seem to be an important factor in the after-treatment of the operation. The dowels should be three-sixteenths of an inch in diameter and three inches in length They may be sunk two inches in the tibia and one inch in the tarsus. Holes need not be drilled for them in the latter, as their sharp points readily penetrate the cancellated structure of these bones. Uniting the severed tendons has, without doubt, added to the function of the foot in this case. Though suggested in THE MEDICAL NEWS editorially, it does not appear to have been attempted before. The plantar fascia was chosen as a strong accessible point to which to attach the tendo-Achillis instead of the tarsal periosteum, as suggested in THE NEWS

Within the narrow limits of motion which now remain, the patient can flex, as well as extend the foot. The motion is partly tarso-metatarsal, and partly tarso-tibial. The latter is diminishing, and the braced boot which he wears may probably be cast aside within one year.

The following table includes, it is believed, all the operations which have been performed, with the exception of five Russian cases reported incidentally by Sklifossowsky. The first nineteen cases are taken from the table of Zesas.[1]

[1] Archiv für klinische Chirurgie, 1886, Bd. 33.

Table of Operations.

No.	Operator.	Year.	Age.	Cause.	Result.	Authority.	Remarks.
1	Wladimiroff,	1871	15	Caries.	Recovery.	Aus den Arbeiten der Gesellschaft der Aerzte der Stadt Kasan, 1872.	Patient walked very well without cane.
2	Mikulicz,	1880	23	Syphilitic ulcer.	Recovery.	Archiv für klin. Chirurgie, Bd. 26.	At the end of four months patient walked with cane and boot, while in eighteen months did hard work, and could walk one hour.
3	Socin,	1881	22	Caries.	Recovery.	Jahresbericht über die chirurgische Abtheilung des Spitales zu Basel, 1881–82.	After two months used cane and worked in the field; no relapse after two years.
4	Mikulicz,	1881	27	Caries.	Recovery.	Centralblatt für Chirurgie, 1884.	Patient, with boot, could walk quite far, but without it had to use a cane; six months afterward died of pulmonary tuberculosis
5	Sklifossowsky,	1882	30	Caries.	Recovery.	Bull. de la Société de Chirurgie de Moskou, 1882.	Patient did well.
6	Haberern,	1882	18	Caries.	Relapse.	Verhandl. der Deutschen Gesellschaft für Chirurgie, 1884.	Amputation of the leg, after five months, from which he recovered.
7	Mikulicz,	1883	16	Caries.	Recovery.	Centralblatt für Chirurgie, 1884.	Patient walked in six months with boot; without it had to use a cane.
8	Lauenstein,	1883	32	Caries.	Recovery.	Ibid.	Patient died in eight months of what appeared to be pulmonary tuberculosis.
9	Lauenstein,	1883	25	Caries.	Recovery.	Ibid.	Patient could walk four hours at a time, and without boot could step firmly upon his foot.
10	Mikulicz,	1883	?	Caries.	Recovery	Verhandl. der Deutschen Gesellschaft für Chirurgie, 1884.	Patient walked well with cane.
11	Roser,	?	?	Caries.	Recovery.	Fischer: Deutsche Zeitschrift für Chirurgie, xxiii. S. 164.	Functional result excellent.
12	Kümmell,	1884	38	Caries.	Relapse.	Centralblatt für Chirurgie, 1885.	After four months resection of the rest of the tarsus, part of the metatarsus, and a portion of the tibia and fibula.
13	Schattauer,	?	10	Caries.	Recovery.	Ibid.	Patient, with boot, could walk many hours without fatigue.
14	Renssen, (Ranke's Clin.)	1884	?	Deformity resulting from fracture.	Recovery.	Ibid.	Seven and a half months after operation patient walked well with boot; 3½ cm. shortening.
15	Schattauer,	1884	9	Caries.	Relapse.	Ibid.	Five weeks after the operation amputation of the leg; recovered.
16	Fischer,	1884	18	Caries.	Relapse.	Deutsche Zeitschrift für Chirurgie, xxiii. 1 u. 2 Heft.	Resection of second and third cuneiform bones and remainder of cuboid; recovered. At the end of a year patient walked well with boot and cane; could go up stairs.
17	Niehans,	?	50	Injury of heel.	Recovery.	....	Very good functional result. Without boot or cane became easily fatigued.
18	Sordina,	1885	20	Caries.	Gangrene.	Centralblatt für Chirurgie, 1886, No. 3.	Amputation at the lower third of the leg.
19	Sordina,	1885	11	Caries.	Recovery.	Ibid.	Very good result.
20	Gutsch,	1886	13	Caries.	Recovery.	Archiv für klin. Chirurgie, Bd. 34, 1886.	Resection included parts of all the cuneiform bones and seven centimetres of the tibia and fibula; function completely restored.
21	Fenger,	1886	20	Caries.	Recovery.	Journal of the Amer. Med. Association, vol. viii., Jan. 1887.	Fifteen months after the operation can walk without boot and cane, and bear the whole weight on the foot; solid ankylosis; lengthening 5 cm.
22	Hopkins,	1887	37	Traumatic ulcer.	Recovery.	....	After eight months can walk four miles with cane and boot; limited motion under voluntary control in flexion as well as extension; about ¾ inch lengthening.

THE APPEARANCE OF A LARYNX NEARLY TWENTY YEARS AFTER THE EXTIRPATION OF AN EPITHELIOMA BY EXTERNAL ACCESS.

BY J. SOLIS COHEN, M.D.,
OF PHILADELPHIA.

ON February 25, 1868, in the presence of the late Professor S. D. Gross; of the patient's physician, the late Dr. John L. Atlee, of Lancaster; the late Dr. Elsberg, of New York; Dr. R. J. Levis, and others, I removed, under chloroform, from the larynx of a gentleman, thirty years of age, a large portion of his left vocal band and the entire lining membrane of the left ventricle, together with masses of morbid growth; portions of which, removed by intralaryngeal procedures, had been pronounced to be epithelioma by the most competent microscopists of the day in Philadelphia and in Washington.

I had been using chemical canterization, had been removing fragments, piecemeal, with forceps, sawing them off with knives and electric cautery; but on finding the bulk of the tumor increasing, despite the removal of masses, which, in the aggregate, exceeded the bulk of the neoplasm when first detected, I determined to cease these efforts. So I performed a precautionary tracheotomy, and, subsequently, split the larynx externally, removed the growths with cutting instruments and forceps, scraped out the lining membrane of the ventricle, and seared all the raw tissues with a solution of acid nitrate of mercury (33⅓ per cent.).

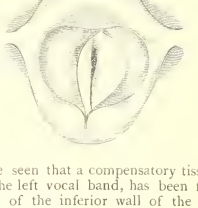
When examined microscopically, the masses removed were pronounced to be epithelioma.

The patient did well, and some months later, there having been no recurrence, I removed the tracheal canula. This case was reported in the *Medical Record*, p. 244, July 15, 1869; and in my treatise on *Diseases of the Throat*, 1872. In the second edition of the treatise (1879) I intimated that as the patient had survived the operation so long without recurrence, I felt that, despite the microscopic evidence, I had been dealing not with an epithelioma but with a benign growth.

Finding that the patient was free from laryngitis only when in a warm and equable inland climate, I advised him to fix his residence permanently in a locality which I selected. This advice was taken. Its wisdom has been emphasized by the fact that every summer visit to Pennsylvania has excited hoarseness and some amount of inflammation of the mucous membrane, from both of which conditions perfect immunity has been experienced while the patient remains in his home of expatriation.

A few weeks ago the patient called upon me hoarse with a laryngitis, and somewhat worried by recent newspaper gossip. Upon relief from the laryngitis his voice became excellent, better than I had ever heard it, and not sufficiently harsh to attract attention. His voice, at home, he has told me at previous visits, "could be heard a mile along the railroad track," so it must be perfectly satisfactory.

Believing that a picture of the larynx at so late a date would be interesting, I requested my colleague, Prof. Watson, of the Polyclinic, to use his skill in preparing it.



It will be seen that a compensatory tissue doing service as the left vocal band, has been formed at the expense of the inferior wall of the ventricle, which has been in great measure obliterated by the eversion.

As acknowledged in my report of the case (*loc. cit.*, p. 245), I feel indebted for much of the success to a whispered suggestion from Prof. Gross, after removal of the tumor and staunching of the hemorrhage, that I should take the sharp edge of the heel tip attached to the handle of my bistoury and scrape out the entire ventricle; and thus, in his forcible language, remove "the very atmosphere of the disease."

AN OBSCURE CASE OF UNCONTROLLABLE EMESIS; LAPAROTOMY; DEATH.

BY WILLIAM T. SMITH, M.D.,
PROFESSOR OF PHYSIOLOGY IN DARTMOUTH MEDICAL COLLEGE, N. H.

ON the 12th of August, Maggie M., a domestic, eighteen years of age, consulted me at my office for a disordered stomach, with vomiting. I gave a simple remedy and did not see her again for a week, when she came, saying that the vomiting had not ceased and she was no better. Two days later I was called to see her at her house, and then I learned the following history of the case.

About a year ago she had a short sickness, with bloody discharges from her bowels. From that time she was subject to frequent attacks of headache and vomiting. The headaches, after a time, ceased, but the attacks of vomiting persisted. They came as often as once in ten days, the longest period of immunity being one period of three weeks. The bowels, which had been regular in their action, became from the time of the first attack very costive. She would go a week without a movement. Her menstruation became somewhat irregular. Except that she was constipated, she was perfectly well between the attacks of vomiting, and worked steadily. These, when they came on, lasted a day or part of a day, and then she would be entirely relieved.

At the time when I was called to her house, she had been vomiting two weeks. She had no fever, a pulse of about 80, no pain, no local soreness, no tympanites. I could find no tumor of any description in the abdomen. Her bowels had moved slightly within a few days. I examined the uterus thoroughly and the adjacent tissues, but found nothing abnormal. The urine was normal. There were

no symptoms of disturbance of nerve centres. I gave enemata, but got only slight liquid discharges for three days. I then gave three compound cathartic pills. For the next twelve hours her vomiting was copious and distinctly fecal. After the effect of the pills had ceased, the fecal character was less marked, but it continued in a greater or less degree to the end. Professors E. S. Dunster, C. P. Frost, and Charles B. Nancrede, saw and examined the patient. She was fed by the rectum, and various methods were assiduously tried to check the vomiting, but in vain. Laparotomy was discussed, but postponed from day to day on account of the lack of definite local symptoms, and because there was repeatedly a discharge of liquid fecal matter per rectum, proving that no complete obstruction existed.

Obturator hernia was excluded by the absence of signs on examination. After ten days had elapsed since I was called to her bedside, and more than three weeks since the vomiting began, it was decided that laparotomy, as the last resort, offered the only chance, and that a slight one, of recovery. Dr. Nancrede performed the operation, assisted by Dr. Dunster. The strictest antiseptic precautions were observed. An incision four inches long permitted the introduction of the hand, and careful search was made for obstruction. None was found, though there was a suspicious narrowing of the gut in a portion of its course. The incision was closed. The patient recovered promptly from the ether, and there were no symptoms of shock. She rallied well from the operation and lived through the night, but died the next morning.

At the post-mortem, a portion of the ileum about one inch long, five feet from the ileo-cœcal valve, was found to be narrowed, apparently by cicatricial contraction, to half its normal calibre. The valvulæ conniventes were obliterated, and the surface of the thickened membrane suggested distinctly a healed ulcer.

It is a well known fact that to excite reflex vomiting it is not necessary that the whole calibre of an intestine be cut off—a partial constriction is sufficient. We were compelled to accept this as the solution of this sad and perplexing case.

SUB-BENZOATE OF BISMUTH, AN ESCHAROTIC.

By ALLEN J. SMITH, M.D.,

ASSISTANT DEMONSTRATOR OF PATHOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

In the treatment of a phagedenic tendency in several cases of chancroids in the venereal wards of the Philadelphia Hospital the writer, then on duty as a resident physician, became satisfied of the faulty character of the local measures, in that the escharotics usually employed were too severe for use, except with anæsthetics, and had to be applied too rapidly because of their excessive action. Recalling certain characteristics of several benzoates, a combination of that acid with bismuth suggested itself as of possible service; and acting upon this idea, Mr. Joseph W. England, Chief Druggist of the Hospital, kindly prepared a quantity of the oxy- or sub-benzoate for trial.

Bismuth subnitrate was treated with nitric acid, heated and dissolved. To this, hot water in small quantities at a time was added until a marked opalescence was obtained; and the solution thus prepared added slowly and with constant stirring to a solution of sodium benzoate in water.

The white precipitate was collected, and washed with alcohol to separate any free benzoic acid or sodium benzoate, and then dried. The chemical reactions upon which these steps are based are in Mr. England's opinion probably as follows:

$$BiONO_3 + 2HNO_3 = Bi_3NO_2 + H_2O.$$

$$Bi_3NO_2 + NaC_7H_5O_2.H_2O = BiOC_7H_5O_2 + NaNO_3 + 2HNO_3.$$

In the second equation the bismuth salt is precipitated and the nitrate of sodium and nitric acid separated in the filtrate, in which is present also a quantity of free benzoic acid. After drying, a smooth white powder, of a relatively light specific gravity, was obtained. This was employed in dressing the chancroids, just as iodoform or other antiseptic powders are used; the sore being carefully cleansed, a little of the powder was dusted over the surface and the dressing completed with some simple bland ointment. For a short time no sensation whatever was experienced, then a warmth of the part, and in about ten minutes a burning and tingling sensation manifested itself and continued for several hours—not severe enough in character to render the patient positively uncomfortable, except from excitations of the part, which were afterward controlled by camphor or bromide of potash administered internally, or by adding a little morphia to the bismuth salt in dressing the sore.

The dressing was renewed once or twice daily, and the bismuth powder employed until the type of the sore had changed – within seventy-two hours in the three cases under the writer's care, the unhealthy purulent surface becoming clean and red with active granulation. After this point had been reached iodoform was substituted for the sub-benzoate and the sores allowed to heal, which they did thoroughly and quickly.

This material is undoubtedly a mild escharotic when thus applied, with a slow and continued action; and erodes the unhealthy tissues gradually and comparatively painlessly, thus avoiding the inconveniences of such powerful caustics as nitric acid and bromine.

It was used as an occasional dressing for indolent leg ulcers with marked benefit, stimulating the sores into granulating surfaces, and cleaning them of the peculiar glazed coating such ulcers often present, just as an occasional application of nitrate of silver would do.

223 South Seventeenth Street, Philadelphia.

HOSPITAL NOTES.

THE TREATMENT OF TYPHOID FEVER.

Good Samaritan Hospital, Cincinnati.

Dr. Whittaker's treatment for the mild cases is purely expectant. Most of them require nothing more than rest in bed and milk diet. In all cases, when the

temperature reaches 103°, antifebrin, three to five grains, is administered. Few cases have required more than three grains to effect a reduction of two degrees within an hour. Five grains produce, for the most part, excessive diaphoresis and chills. When this accident has occurred after three grains, antipyrin is substituted, in doses of ten grains. In one protracted (six weeks) case under the writer's observation antifebrin, in three to five grain doses, was given every two to four hours, for three weeks, with invariably good effects upon the temperature and general condition. In protracted cases expressed beef-juice with calves'-foot jelly, is added to or substituted for milk. In all cases whiskey is administered as soon as the pulse flags, and in cases of distinct enfeeblement of the heart the sulphate of spartein is given in one-sixteenth of a grain doses, every four hours, in lieu of digitalis, whereby the stomach is not disturbed.

Of fifteen cases under observation at one time, two showed sharp complications on the part of the lungs. Slight bronchial catarrh was present in nearly all the cases. Rusty and bloody sputum, with crepitus and dulness, occurred in two cases, one of which, the case of a victim of chronic alcoholism, was additionally complicated with profuse hemorrhage from the bowels. Two of the fifteen cases were affected with profuse hemorrhage. One died—the only fatal case thus far; the other, the case referred to, probably will die.

Upon the supervention of hemorrhage all food is interdicted; thirst is allayed with ice. Ice-bladders are placed on the abdomen, small quantities of opium are administered, and subcutaneous injections are made of sclerotinic acid, which keeps better and irritates less than ergotin. In desperate cases salt water is transfused subcutaneously, as recommended by Ziemssen. This treatment proved entirely futile in one case, as stated. The autopsy revealed extensive ecchymotic patches, stretching over a distance of nearly two feet of the ileum. This entire section of the ileum showed intense hyperæmia throughout. The ulcers were clean, with distinct, sharp edges, and were apparently not the sources of the hemorrhage, which issued per diapedesin. In this case each occurrence of hemorrhage was attended with a reduction of temperature to a subnormal degree, and a complete relief of all nervous symptoms. In the case still living the loss of a large amount of blood, while reducing the temperature in the same way, does not, in the least, clear the intellect. In all severe cases the temperature is taken in the rectum, a difference of two degrees having been frequently observed between the temperature of the rectum and mouth. In no case is any reliance placed upon observations made in the axilla.

PRESBYTERIAN HOSPITAL, CHICAGO.

The usual course pursued in DR. HENRY M. LYMAN'S Ward, at the outset of the disease, is to secure a thorough cleansing of the patient. For this purpose he is treated with a full bath externally, and with two or three cathartic, doses of calomel internally. If there is much diarrhœa, mercury and chalk are substituted for calomel. When the stools indicate the action of the cathartic, mercurials are suspended, and medication is directed chiefly toward the skin and the kidneys. In cases of doubtful character, where the possibility of malarial fever is admitted, full doses of quinine are prescribed for a few days; but they are omitted as soon as the uncomplicated typhoid character of the fever is apparent.

During the course of the fever, when no complications arise to require special attention, the patient is frequently sponged with tepid water. The kidneys are stimulated with a solution of potassium chlorate—one drachm to the pint of water, the whole to be drank during twenty-four hours. If patients prefer an acid draught, they are allowed lemonade, tamarind water, or dilute phosphoric acid and water, so long as diarrhœa does not forbid. Sleep at night is procured for restless patients by the administration of whiskey and milk, or urethan in half-drachm doses, or chloral hydrate with potassium bromide. Opiates are rarely found necessary in uncomplicated cases. Alcoholic stimulants are not used unless the heart shows signs of weakness. A diet of milk and animal broths is carefully administered. Gruel *ad libitum* is given, unless flatulence indicates indigestion of starchy substances.

Diarrhœa is not specially treated, unless it threatens to become excessive. Ordinary cases get nitrate of silver and opium every six or eight hours. If the tongue becomes red and glazed, especially if the heart is at the same time enfeebled, turpentine emulsion gives good results. Unusual flatulence is greatly relieved by disinfection of the bowels with naphthaline, in five grain doses every three or four hours. Antipyrin is reserved for cases with high temperature, restlessness, and insomnia. It is not used continuously.

During convalescence, the principal reliance is placed upon a careful dietary and general hygiene, with such medicines as assist digestion and nutrition. Abundant nursing and the least possible medicine are the objects at which we aim in the treatment of uncomplicated typhoid fever.

COOK COUNTY HOSPITAL, CHICAGO.

DR. NORMAN BRIDGE, in cases seen early and when there is any doubt of the diagnosis, gives quinine in a few large doses, to the extent of producing positive cinchonism. He frequently afterward gives it in small or tonic doses, for many days continuously. If there is not positive proof that the bowels have been thoroughly evacuated already, this end is accomplished by a laxative of calomel. Calomel is given occasionally in the course of the sickness in some cases when a laxative is required, this drug having been found more mild and harmless than any other. The most common method of evacuating the bowels, however, when any assistance is required, is by an enema of warm water. No patient is allowed to pass more than forty-eight hours without evacuation of the colon, and in constipated patients an enema is often given each day.

Patients with diarrhœa receive rather full doses of salicylate or subnitrate of bismuth, the former by preference, and small doses of deodorized tincture of opium, but rarely any preparation of turpentine. For severe headache or backache early in the sickness, small doses of opiates are often given, but when headache alone is complained of, and there is much fever, moderate doses of antipyrin are found most useful, since they relieve more or less both conditions.

Alcohol is used only in conditions of serious prostra-

tion with weak heart and rapid pulse, when it is given freely, and with as much regularity as to times and doses as any other remedy. It is unusual for a patient to receive more than eight ounces of whiskey in twenty-four hours, the more common quantity being two to four ounces. Nux vomica and strychnia are given often in the same conditions.

High temperatures are combated with sponge baths and partial or complete packs with tepid water, and with antipyrin or antifebrin. Quinine is not used as an antipyretic. A pack is often continued for several hours, the patient having little or no clothing but the wet sheet. It is not regarded as necessary to resort to any of the water measures till the temperature has reached 103° F., and rarely then unless they are grateful to the patient; and they are discontinued as soon as the temperature falls to 101° F. During the bathing and packing, as well as at all other times, the extremities of the patient are kept warm by clothing and hot applications, regardless of the temperature of the trunk of the body. A bath in a tub has not been used.

Antipyrin is given in ten to twenty grain doses at intervals of one to two hours when the temperature is high, and the pulse not specially weak. More than three such doses are rarely received by a patient in a day, or a night. Patients who have, with their high temperatures, fulness and pain in the head, experience most relief from this remedy and to such it is given by preference.

Antifebrin has been used comparatively little, but in a few cases it has been employed in the same conditions and in the same cases as antipyrin, and with effects nearly identical. Thallin has been used a little, but was discarded on account of its suspected tendency to depress the heart.

A high temperature for a few hours each day is not regarded as, *per se*, a very grave condition; and the disposition on the part of *internes* to use antipyretics of all sorts, is repressed rather than encouraged.

The stools are directed to be received into utensils containing some sufficiently powerful disinfectant.

The diet is in the main fluid, milk being the staple. One or two quarts of milk daily are taken by each patient, who takes nothing else. Egg-nog, beef tea, and other fluid meat preparations are allowed. A little stale bread, or cracker, is often allowed to mild cases throughout, and always forms a part of the diet early in convalescence. In bad cases of diarrhœa milkman's cream is sometimes added to the milk, a smaller quantity being taken, and a corresponding reduction in the amount of the casein being secured.

The presence of tympanites does not lead to any change in the treatment, beyond the application of turpentine stupes to the abdomen.

Hemorrhage from the bowels is regarded as an indication for the use of opiates, warmth to the extremities, for a reduction in the foods that can produce fecal matter, and for stimulants to a moderate degree.

Care is exercised during convalescence to prevent patients from eating improper articles, or too much, and from taking too much exercise; from being chilled generally, and from having cold extremities in particular. It has been found, it is believed, that neglect of these points has led to many true relapses of typhoid fever.

MEDICAL PROGRESS.

Antiseptic Rules for Monthly Nurses and Physicians.—Dr. Playfair, in a paper read at the late meeting of the British Medical Association, gave the following rules for antisepticism in the lying-in chamber:

1. Two bottles are supplied to each patient; one contains a solution of perchloride of mercury, of the strength of one part to one thousand of water, tinted with litmus (called the 1 in 1000 solution), the other carbolized oil (1 in 8).

2. A small basin containing the 1 in 1000 solution must always stand by the bedside of the patient, and the nurse must thoroughly rinse her hands in it every time she touches the patient in the neighborhood of the genital organs, for washing or any other purpose whatsoever, before or during labor, or for a week after delivery.

3. All sponges, vaginal and rectal pipes, catheters, etc., must be dipped in the 1 in 1000 solution before being used. The surfaces of slippers, bed-pans, etc., should also be sponged with it.

4. Vaginal pipes, enema tubes, catheters, etc., should be smeared with the carbolized oil before use.

5. Unless express directions are given to the contrary, the vagina should be syringed twice daily after delivery with warm water, with a sufficient quantity of Condy's fluid dropped into it to give it a pale pink color.

6. All soiled linen, diapers, etc., should be immediately removed from the bedroom.

N.B.—These rules are for the purpose of protecting the patient from the risk arising from accidental contamination of the hands, sponges, etc. It is, therefore, hoped that they will be faithfully and minutely adhered to.

There are, in addition, a few precautions to be used during the labor to which the practitioner should himself see.

1. Before making any examination, or using the antiseptic lotion, he should thoroughly cleanse his hands with soap and water, being specially careful as to his nails, about and under which septic matter may easily lurk.

2. At an early stage of the labor the vagina should once be thoroughly syringed with the antiseptic lotion, and vulva sponged with it.

3. When the head is distending the perineum the external genitals should again be sponged with the lotion.

4. Cold cream, lard, etc., should not be used for lubricating the fingers, and carbolized oil or vaseline should be employed.

5. When possible, sanitary towels should be used to receive the lochial discharges in preference to diapers, as they may be burned when soiled. All risk from imperfectly cleansed diapers is thus avoided.

I do not think that these suggestions impose on the practitioner a burden grievous to be borne, or call upon him to do anything which, having the interest of the patient at heart, he should for a moment hesitate about. —*British Medical Journal*, November 12, 1887.

Hydrate of Chloral a Preventive of Rabies.—At a recent meeting of the French Academy of Sciences,

Brown-Séquard reported a series of experiments upon rabbits and birds, in which by injecting oil of tansy he had produced a species of rabies, which was controlled by the vapor and subcutaneous injections of hydrate of chloral. Arguing by analogy, Brown-Séquard considers chloral a preventive of true rabies, and refers to his previous writings on the subject, and to cases in the human subject, in which he had been able to exemplify his theory.—*L'Union Médicale*, November 5, 1887.

FOR CHRONIC GOUT.—VIGIER has used to advantage

R.—Lithii carbonat.	. . .	℥ 2½.
Sodii iodid.	. . .	℥ 2½.
Ext. gentian.	. . .	gr. 23.
Pulv. gummi arab.	. . .	gr. 23.
Pulv. glycyrrhizæ	. . .	gr. 100.—M.

Ft. pil. 100 in num.
To be kept tightly corked.
Sig.—One pill with each meal.

Also,

R.—Lithii carbon.	. . .	℥ 2½.
Potass. iodid.	. . .	℥ 2½.
Pulv. gummi arab.	. . .	gr. 23.
Ext. gentian.	. . .	gr. 70.—M.

Ft. pil. 100 in num.
Sig.—One with each meal.—*Revue de Thérapeutique* November 1, 1887.

POISONING BY ANTISEPTIC SOLUTIONS OF BICHLORIDE OF MERCURY.—MR. A. J. PEPPER calls attention (*Lancet*, November 5, 1887) to the source of danger to life from the use of bichloride of mercury in the form of very weak solutions—*e. g.*, 1 in 1500 or 2000. I understand, he says, that in midwifery practice it is not at all uncommon to employ injections of the strength just mentioned for cleansing purposes, not only as a corrective against septic discharges, but also as a prophylactic. Where the patient is free from organic disease of the kidneys one has little need to fear untoward consequences from the treatment under consideration. I am aware of two cases of death from acute inflammation of the bowels following closely on the injection of very weak mercurial solutions into the vagina shortly after parturition. As in each instance no other cause of the fatal complication could be discovered, there is little doubt that the acute irritative lesions in the intestines were due to the bichloride in the course of its elimination. The action of the salt was concentrated, so to speak, in this particular region by reason of grave renal affection. In one of the two cases I made a very exhaustive post-mortem examination. The whole of the small and large intestine was acutely inflamed. There were thousands of hemorrhagic patches, punctate and irregular in shape. There were a few minute recent ulcers. The catarrhal congestion was extreme. Lymph was effused into the substance and upon the surface of the mucous membrane. Slight general peritonitis seemed to have started at the middle of the colon, where the intestinal lesion was more marked than elsewhere. The stomach was not affected. The kidneys were in an advanced state of fatty degeneration. No aperients had been administered to the patient, but a solution of bichloride of mercury (1 in 2000) had been injected into the vagina to prevent decomposition of the lochia. Profuse diarrhœa ensued, and continued until death. The body temperature was never raised, and latterly it was subnormal. I was at a loss to account for the ultimate cause of the diarrhœa and its fatal consequences until the circumstances were explained to me by an obstetric physician who was present at the necropsy, and who had witnessed a precisely similar case in his own practice. The lesson to be learnt from the foregoing narrative is—that even a very attenuated solution of a mercurial salt should not be employed as a vaginal injection without first ascertaining the state of the kidneys by an examination of the urine.

PYLORECTOMY FOR CANCER.—DR. BERNAYS reports, in the *Medical Brief*, No. 8, 1887, a case of cancer of the pylorus, which he found extended into the duodenum, and was adherent to the head of the pancreas. He removed the tumor, and sutured the resected gut, carefully isolating the orifices of the bile-ducts. A drainage tube was left in the abdomen, and antiseptic dressings applied. Bichloride of mercury, 1 to 4000, was the antiseptic employed. The patient died of shock, nineteen hours after operation.

Dr. Bernays' conclusions, from his study of the subject, are as follows:

1. The operation of pylorectomy, for the cure of a cancerous stricture can be successfully performed in only a limited number of cases. It will always be impossible to determine the feasibility of the operation before making an explorative laparotomy.

2. The operation of pylorectomy, in cicatricial stricture following round ulcer, is clearly indicated, and will be feasible in the majority of all the cases.

3. Uncontrollable hemorrhage from a round ulcer of the stomach, which threatens the life of a patient is a clear indication for gastrotomy—not necessarily for pylorectomy. The operation necessary to check the hemorrhage will become apparent after inspection of the location and source of the hemorrhage.

4. Perforation of an ulcer of the stomach into the abdominal cavity is an imperative and vital indication for laparotomy and consequent gastrotomy and gastrorrhaphy.

5. In cases of inoperable carcinoma of the stomach the operation of gastrostomy is indicated with a view to local treatment of the tumor by means of chemicals or the curette from within this organ.

A valuable bibliography is appended to the paper.

THE ALKALINITY OF THE BLOOD IN CERTAIN DISEASES.—VON JAKSCH, of Graz, in an extended article in the *Zeitschrift für klinische Medicin*, Band 13, Heft 3 and 4, concludes that

1. Fever lessens, in greater or less degree, the alkalinity of the blood.

2. This lessened alkalinity is a constant symptom in uræmia.

3. Diseases of the liver, in which destruction of the parenchyma occurs, produce this condition.

4. Leukæmia, pernicious anæmia, and chlorosis lessen the alkalinity of the blood.

5. Poisoning with carbon dioxide produces this result also.

Excision of the Larynx for Malignant Disease.—The operative treatment of malignant disease of the larynx is an essentially modern development of surgical art, and in spite of one or two brilliant but exceptional triumphs, it has till quite recently been marked more by boldness of conception and execution than by solid success. That, however, is no more than could at some time have been truly said of many other provinces of surgery in which the knife, which at first was little better than a lethal weapon, is now an instrument of real and lasting good. The larynx was first completely excised little more than twenty years ago by Dr. Patrick Heron Watson, of Edinburgh, in a case of syphilitic stenosis which directly threatened the patient's life; and in 1873 total extirpation was successfully performed by Billroth for cancer. Since then the operation has been done by many surgeons, but the results have, on the whole, been extremely discouraging.

From Mr. Butlin's recent analysis in his *Operative Surgery of Malignant Diseases*, of Hahn's valuable statistics (Volkmann's *Vorträge*, No. 260, 1885), we learn that 74 cases of excision of the entire larynx for new growths have been recorded: in 3 the disease was respectively tuberculosis, papilloma, and polypi. Of the 71 malignant cases, 25 died within the first fortnight, and 5 within six or seven weeks after the operation; death was due, in a large majority of instances to pneumonia, or purulent bronchitis, and could in no case be attributed to recurrence of the disease. Thus, there appears to be a mortality of about 40 per cent. directly due to the operation itself. Not one of the cases in which the disease was sarcoma and not carcinoma died. Of the 65 cases in which the larynx was completely excised for carcinoma, 30 died from the immediate, or almost immediate, results of the operation; as in the case of abdominal sections, the death-rate has slightly diminished recently, through improvements in operating and after-treatment. A few of the cancer cases died of collapse or hemorrhage; the remainder succumbed to the pulmonary complications above mentioned. The direct entrance of air into the trachea endangers the lungs, as after tracheotomy; but the severe type of inflammation generally observed after excision of the larynx is distinctly septic, and is due to the escape of discharges from the wound into the trachea; the patient, moreover, is always in a more or less enfeebled state of health.

Resection of the larynx or removal of a portion of the organ was first performed for epithelioma by Billroth in 1878; the patient survived the operation six months, when he died of recurrence of the disease. In another case, in which the left half of the organ was excised by Reyher, of St. Petersburg, in 1880, the patient was alive and free from recurrence fourteen months after the operation. At the International Medical Congress of London in 1881, however, the late Dr. Foulis, of Glasgow, who read a paper embodying the whole experience of the profession on the subject up to that date, argued strongly in favor of complete, as against partial, excision, on the ground that whilst little, if at all, more dangerous in itself, the risk of perichondritis is avoided, and the disease is more thoroughly eradicated. Subsequent experience has not borne out this view. Owing to the great and apparently irreducible fatality attending it, complete excision of the larynx has been looked upon with growing disfavor by surgeons, whilst the removal of a portion of the organ in suitable cases has, during the last few years, been shown to be not only much less dangerous in its immediate consequences, but also more effectual in restoring the patient to comparative health and comfort. The progress that has been made in this direction is largely due to Dr. Eugene Hahn, of Berlin; and one or two of our own countrymen have also operated with success so far as can be judged in the meantime.

The following are the results of partial excision up to the present time: In 12 cases, where half the larynx was removed—in 10 cases for carcinoma, in 2 for sarcoma—only 1 patient died from the direct effects of the operation. The wound is far easier to dress and the patient's condition less desperate than when the entire larynx is excised. In 6 cases the larynx has been completely, and in 2 partially, removed for sarcoma. The after-history of 1 of the complete operations is lost; of the remaining 6, it appears that 1 was quite well and free from recurrence six years after operation; 1 was well two years after; 1 died of phthisis a year and a half after excision of the larynx, without a sign of recurrence of the local disease; 1 died of recurrence of the sarcoma seven months after operation; and 1 fifteen months after. In the 2 recorded cases of partial excision for sarcoma, 1 was free from recurrence "some time after the operation;" 1 died ten months after from pulmonary complication, without recurrence of the new growth. Of the 35 cases of excision for carcinoma which recovered from the operation (excision, as above noted, proved directly fatal to 30 patients), 20 died within a few months from recurrence. Of the remaining 15, the history of 1 case is lost; 2 died of pneumonia at the end of three and four months respectively; 7 cases were yet alive when these statistics were prepared, and free from recurrence at periods ranging from fourteen months to four years. Thus only 1 patient could be considered cured. Out of 7 partial excisions of the larynx for cancer, 1 died of the operation; 3 died of recurrence within seventeen months, and in the 3 which remain there was no recurrence, but only fourteen months had elapsed in one of these, eleven in another, and an unrecorded space of time in the third. It must be observed that many of the above cases appear to have been badly selected, the patient being in an unsatisfactory state of health, or the disease much advanced. Unfortunately, the survivors, not very numerous at the best, too often find but little comfort in life after the operation. Solis-Cohen remarked at the International Medical Congress in London, in 1881, that recovery and mere survival after the operation are two different things; and Sir Morell Mackenzie observed that a patient after extirpation of the larynx was usually in a condition "of great misery." Professor Lefferts, of New York, stated that the "main reason for the patient's subsequent discomfort, not unusual, however, in like cases, was the impossibility of closing the large defect in the neck, by any form of artificial apparatus, so as to permit of perfect deglutition." Since 1881, cases have been noted where the patient's condition was not in any instance altogether unsatisfactory. Still the frequency of fatal lung complications above recorded is suspicious. The loss of voice can be remedied, more or less, by the use of an artificial larynx. After partial

operations the patient can often swallow easily within a few days; but after complete excision, with extensive removal of the surrounding parts, deglutition may be impossible without assistance, and the patient may need to be fed by means of a funnel and tube. Altogether, excision of the larynx is a gloomy subject to contemplate. For sarcoma, partial or even complete removal is not very unsatisfactory, provided that the disease has not advanced too far. Partial excision for carcinoma is also no desperate operation, but it has not been performed with sufficient frequency to allow of a very decided verdict. As to complete excision for carcinoma, it is highly unsatisfactory. As a rule, it appears to mean death; as an exception, it signifies a short but harassed lease of life, with constant fear of recurrence and of lung complications. Truly a patient under such conditions may say of his life, like the Duke in *Measure for Measure*, "If I do lose thee, I do lose a thing that none but fools would keep."—*British Medical Journal*, Nov. 19, 1887.

THE ANTISEPTIC TREATMENT OF DIPHTHERIA.—LE GENDRE, of Paris, in the *Archives de Laryngologie*, No. 1, 1887, gives the following formulæ for antiseptic mixtures to be used in diphtheria:

Bichloride of mercury may be given in

Aquæ destillat. . . .	ʒ 3¾
Tinct. aconit. . . .	♏ 15 to 30.
Sodii chlorid.	
Pepsinæ	aa gr. ¾.
Hydrarg. bichlorid. . .	gr. 1/6 to 2¼.—M.

Sig.—A teaspoonful every hour.

Cyanide of mercury has been employed in the following solution:

Aquæ destillat. . . .	ʒ 15.
Tinct. aconit. . . .	♏ 15.
Hydrarg. cyanid. . . .	gr. 1/6.—M.

Of which a teaspoonful may be given hourly.

Iodoform may be locally applied in the following:

Ether	ʒ 6¼.
Balsam tolu. . . .	♏ 75.
Iodoform	gr. 38.

In powder it may be mixed with sugar, 1 to 3.

Bromine and the bromides may be given in

Bromin. (pur.)	
Potass. bromid. . . .	aa gr. 8 to gr. 15.
Aquæ destillat. . . .	ʒ 30.

with which the pharynx may be penciled every two or three hours; it may also be used by inhalation.

Sulphur and sulphides may be prepared for use as follows:

Ol. amygdal. dulc. . .	ʒ 5⅝.
Sulphur. sublimat. . .	gr. 38.

This may be used as a gargle.

The following, in pill form, has given good results:

Calcii sulphid. . . .	gr. ¾.
Digitalin.	
Quiniæ arsen. . . .	aa gr. 1/60.

For infants the dose should be but one-half.

Salicylic acid may be used in

Aquæ destillat. . .	ʒ 25.
Glycerin. . . .	ʒ 2½.
Aquæ lauro-cerasi . .	♏ 15.
Acid. salicylic. . . .	gr. 4½.

which may be applied upon cotton to the fauces.

Benzoate of sodium has been frequently tested, and is used by Litzerich in the following:

Aquæ destillat.	
Aquæ menth. piper. . .	aa ʒ 10.
Syrup aurant. cortic. . .	ʒ 2½.
Sodii benzoat. . . .	gr. 75.

From half a teaspoonful to a dessertspoonful hourly.

Lactic acid is given by Bricheteau and d'Adrian, by inhalations of spray, in solution 1 to 100, as a gargle:

Aquæ	ʒ 25.
Syrup aurant. . . .	ʒ 7½.
Acid. lactic. . . .	gr. 75.

may be employed.

Diphtheritic ulcers may be touched with

Glycerin	ʒ 15.
Acid. lactic. . . .	gr. 45.

Oxalic acid, given internally, may be used after the prescription of Cornillon:

Infusion of green tea . .	ʒ 32½.
Syrup aurant. cortic. . .	ʒ 7½.
Acid. oxalic. . . .	gr. 23.

Dose, a teaspoonful to a dessertspoonful every three hours. With this treatment is generally combined the use of a tea made by infusing laurel leaves. The local use of oxalic acid is best in solution, 1 to 20, or in glycerine, 1 to 100.

The writer personally prefers the following treatment: Three or four times daily touching the diseased surfaces with corrosive sublimate, 1 to 100 in alcohol; he dips a small sponge or pledget of cotton in this, carefully presses out superabundant fluid, and touches the false membrane. Every four hours he orders thorough spraying or douching of the nares and fauces with *warm* boric acid solution, 4 to 100. Internally, benzoate of sodium, gr. 45 to ʒ 3 per diem, in a mixture given in teaspoonful doses hourly. Bordeaux, Spanish, and Champagne wines and coffee are to be freely used. In a succeeding number of THE MEDICAL NEWS will be given additional formulæ for the treatment of diphtheria, as collected by LE GENDRE.

THE CARE OF SCHOOL CHILDREN'S EYES.—At the Vienna Congress of Hygiene COHN, of Breslau, in an extended study of the eyes of school children concluded that of all lights the electric is the best. Definite provisions regarding desks, books, paper, types used, and the arrangements of curtains and blinds are advised, and especial caution in avoiding overwork is enjoined. Regarding glasses, no child is allowed to wear glasses whose myopia is less than two dioptres. If the myopia ranges between two and six dioptres, a concave glass, whose distal focus is about twenty inches, is given, and precautions are taken to prevent the child from injuring the chest by constant stooping. If the myopia is more than six dioptres, it is generally found that a complica-

tion of eye disorders is present, and glasses are often harmful. The attention of the profession, and of the State is urged for the careful supervision of schools and scholars.—*Deutsche medicinische Wochenschrift*, November 3, 1887.

Pregnancy (Rachitic Pelvis); Induction of Labor; Cæsarean Section; Recovery.—Breisky, of Vienna, reported at a meeting of the College of Physicians of Vienna, October 28, 1887, the case of a rachitic woman, who in addition to the usual effects of rachitis suffered from atrophic coxitis. As no absolute hindrance to delivery existed premature labor, at the beginning of the ninth month, was induced. The head, however, failed to descend into the pelvis; the temperature rose, and labor made no progress. Sänger-Cæsarean section was performed. A five per cent. carbolic acid solution was used to disinfect the decidua, and iodoform was freely used. The stitches were removed on the tenth day; perfect recovery followed. Breisky warns against undertaking Cæsarean section for insufficient reasons, because (1) We cannot measure the conjugata vera with exactness; (2) we cannot determine the size of the head exactly before birth; (3) we cannot estimate the power which the uterus will exert, nor the success of the uterine contractions. In view of these facts, no merely theoretical grounds should lead to the performance of Cæsarean section.—*Wiener medizinische Presse*, October 30, 1887.

An Efficient Vesicant.—Soules has obtained excellent results from

Acid. carbolic.	gr. 30.
Alcohol	gtt. 5.
Camphor. pulver.	gr. 75.

To be pulverized together; and

Ol. olivæ.	℥ 4½.

to be added.

This may be used as a vesicant, as the conditions indicate, with proper caution. Dressings should be renewed at least daily.—*Revue de Thérapeutique*, Nov. 1, 1887.

Carcinoma of the Descending Colon; Three Operations for the Relief of Occlusion; Recovery.—At a meeting of the Vienna College of Physicians, on November 4, 1887, Von Hacker exhibited a patient on whom an operation for artificial anus was performed in January, 1887, for carcinoma of the colon, with occlusion of the bowel. In May, the patient returned, asking that the fistula be closed, as feces were passing naturally. This was done, but at the end of June last it was necessary to remove the tumor, to relieve the original symptoms which had returned. The patient recovered from the intestinal resection in four weeks, and was entirely relieved. The constricted bowel was so nearly occluded that a match could be inserted into the stricture with the greatest difficulty. The tumor was a carcinoma, of the cylindrical epithelial type. Billroth remarked that in these cases when left to nature, the necrosis of the exuberant elements of the cancer resulted in their discharge and in the temporary relief of the stricture; the cicatrization which followed, however, made the occlusion still more pronounced.—*Wiener medizinische Presse*, Nov. 6, 1887.

Iodophenol in Pertussis.—Rothe prescribes

R.—Acid. carbolic.	gr. ¾.
Alcohol	♏ 1.
Tinct. iodin.	gtt. 5.
Aquæ menth. piper. . . .	℥12½.
Tinct. belladonn. . . .	♏ 15.
Syrup. papaveris . . .	℥2½.

(*Syrup papaveris* is but little used in America; its opium strength is half a grain of opium to one thousand grains of syrup, and more definite preparations of opium may be better employed.) Of this a small teaspoonful to a dessertspoonful may be given every two hours.

Rothe found that this combination of remedies reduced very distinctly the number and frequency of the paroxysms.—*Journal de Médecine de Paris*, October 30, 1887.

Pseudo-asthmatic Dyspnœa in Cancer of the Pharynx.—Legueu reports, in the *Gazette Médicale de Paris* of November 5, 1887, the case of a woman, aged fifty-two, admitted to the Hospital Cochin, complaining of pharyngeal pain and paroxysmal dyspnœa. Examination could find nothing to account for the dyspnœa, except mechanical obstruction to breathing, and in a paroxysm, threatening life, tracheotomy was performed. Temporary relief followed, but paroxysms of dyspnœa recurred, which finally proved fatal. Under the temporary relief afforded by tracheotomy, the respiratory tract was carefully explored. Phonation was unimpaired, the larynx was normal; visual examination of the pharynx revealed no lesion to account for the dyspnœa, but, on introducing the index finger into the pharynx, an induration was found above the lower border of the velum palati and upon the left lateral wall of the pharynx, whose extent it was impossible to determine. The canula remained entirely free, and death evidently resulted from a lesion beyond the larynx. Post-mortem examination revealed cancer of the left lateral wall of the pharynx, a little above the lower border of the velum palati, and extending downward on the posterior pharyngeal wall. At one point the pharyngeal wall had been perforated, and the prevertebral tissue had become involved, and a cavity containing about a drachm of fetid pus was present. So extensive had been the involvement of the pharyngeal wall that both the pneumogastric and superior laryngeal nerves of the left side had been implicated; they were adherent to the tumor by indurated cellular tissue. The trachea and larynx were absolutely free. There was no involvement of the tracheal and bronchial glands. Death was caused by the implication of the nervous supply of respiration.

Primary Actinomycosis of the Brain.—Bollinger, of Munich, reports the case of a woman, aged twenty-six, who suffered from symptoms of a cerebral tumor, without convulsions. Death resulted, in coma. Post-mortem examination showed cysto-myxoma of the third ventricle, with œdema and cerebral anæmia. The mass of the tumor was composed of actinomycoses. The invasion of the parasite was probably by the blood, and then the formation of cerebral emboli containing actinomycoses.—*Wiener medizinische Presse*, Nov. 6, 1887.

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THYMOL IN DIABETES MELLITUS.

Isolated cases of disease are valuable on account of their rarity or because they have been thoroughly studied; doubly so when they unite both of these qualities. Diabetes mellitus can scarcely be called a rare disease. Its diagnosis is readily made and the details of its dietetic management are, with minor exceptions, generally agreed upon. In its medicinal treatment, however, the number of drugs that may be employed is suspiciously large, a fact doubtless owing to inaccurate observations. The proper study of a case of diabetes may be compared to an elaborate physiological experiment. In fact, it is nothing else. Not only does it demand that the quantity of urine and its percentage of sugar be estimated, but also that careful records be kept of the body weight and the amount and quality of the ingesta, and this work is merely preliminary to the study of the effect of any of the so-called remedies for this disease.

To appreciate properly the effect of a drug in this affection, it should be administered, not only while the patient is on an exclusively proteid diet, but also while he is partaking of carbohydrates, for, in the former case, the improvement, or cure, may be ascribed to the drug when it is due, in whole or in part, to the diet.

In the recently established therapeutic clinic of the University of Siena, Prof. Bufalini has thoroughly studied the action of thymol in two cases of diabetes, the object of his investigation being twofold. He first endeavored to ascertain the effect of thymol upon the excretion of sugar, and, secondly, whether its well-known power as an intestinal disinfectant would exert a favorable influence upon the condition known as acetonæmia.

To determine the former question, the patients were first placed upon a mixed diet of soup, meat, eggs, bread, coffee, milk and wine, the amount of each being given by weight. The quantity of feces and urine, the density of the latter and its percentage of sugar were also ascertained, as well as the bodily weight in one case, the other being too feeble to be moved. After from a week to ten days of such observations, thymol was given in doses of 30 to 45 grains per diem and continued long enough (to the two cases 12¾ drachms were given in eighteen days) to demonstrate that, while the patient is on a mixed diet, this substance exerts no appreciable effect upon the quantity of urine, its specific gravity, or its percentage of sugar.

When the patient is on an exclusively proteid diet, the case is different and requires some explanation. It is a common observation that as soon as a diabetic is placed upon an albuminoid diet, the sugar in his urine will diminish, perhaps entirely disappear. A persistence in this regimen is, however, apt to be followed by digestive disturbances, with abnormal intestinal putrefaction, and a speedy reappearance of the absent, or increase of the diminished sugar. This occurred in one of Bufalini's cases. Under a proteid diet continued for one month, the sugar had entirely disappeared. Continuing the same diet, gastro-intestinal disturbances (anorexia, vomiting, borborygmi, diarrhœa) set in and were soon followed by a reappearance and steady increase of the sugar. At this juncture it occurred to Bufalini to administer thymol, he believing with his colleague, Martini, and with the writer of this article, that it is the best known intestinal antiseptic. The result was immediately favorable and the conclusion with reference to the drug is that it is not only useful but necessary in cases of diabetes placed upon an exclusively proteid diet. No deleterious effects from the use of thymol were observed by Bufalini and none need be apprehended, although, in the writer's experience, smaller doses (from ʒss to ʒj) are quite efficient in abnormal conditions of intestinal putrefaction.

The second object of Bufalini's research was to test the effect of thymol upon the condition known as acetonæmia. Both of these patients presented all the symptoms of this condition. They were somnolent, greatly prostrated, and they exhaled the odor, and their urine gave the reactions of this substance. Under the use of thymol, the characteristic odor of the breath diminished and the reactions of acetone in the urine became faint, while the general condition improved. Bufalini holds that these results of the thymol treatment establish the fact that acetone is formed in the intestine by abnormal fer-

mentation of the sugar excreted by this channel, and that the ferment is an altered gastro-intestinal mucus.

LAPAROTOMY FOR GUNSHOT WOUNDS OF THE ABDOMEN.

One of the most remarkable revolutions of modern surgery has been that which has occurred in the treatment of penetrating gunshot wounds of the abdomen. Until very recently, a surgeon would have been considered foolhardy had he opened the abdomen for the purpose of searching for and repairing intestinal lesions. Now one who fails to perform laparotomy when there is a probability that the viscera have been injured or bloodvessels torn, by a shot or other penetrating wound, is considered reprehensible; and, without doubt, in the near future, the surgeon who fails to offer his patient the chances afforded by an operation, will be held criminally responsible in the event of an unfavorable issue of the case. The statistics of the late Civil War, as compiled by Otis, which demonstrated how almost uniformly fatal these injuries were, when treated expectantly; the vigorous writings of Marion Sims, and the experimental work upon animals, performed first by the elder Gross, and more recently by Parkes, of Chicago, have been potent factors in effecting this radical change in the treatment of these injuries. It only required the successful cases of Kocher and Bull, to prove convincingly that what was true as regards animals, also held good in the case of human beings.

At the opening session of the Surgical Section of the Ninth International Medical Congress, Dr. Charles T. Parkes, of Chicago, introduced this subject in an instructive paper. Up to the present time somewhat more than forty operations for gunshot wounds have been performed, with a success of about thirty per cent., which rate will undoubtedly increase as operators become more skilled, and acquire more confidence in the procedure. In our issue of November 12th, Dr. J. M. Fox, of Philadelphia, reports another recovery after abdominal section, and suturing of the intestinal lesions, which is believed to be the first successful operation of this nature which has been performed in this city. At the Congress in Washington, there was a considerable diversity of opinion in regard to certain points, but it was generally conceded that laparotomy was proper when there was a well-founded suspicion that the bullet had penetrated the peritoneal cavity. It can scarcely be doubted, however, that the number of successful cases treated expectantly has been underestimated, but we cannot recommend this method of treatment except under exceptional circumstances.

There are some questions connected with this subject which have not received sufficient elucidation. Is it necessary to perform laparotomy in every case of penetrating abdominal wound? It is our opinion that all wounds of the abdominal parietes should be explored with a disinfected finger or probe, and if penetration has been effected, the wound should be enlarged, in order to determine whether lesions of any kind have been made. In stab-wounds the lesion must be limited to the region of the wound, hence it is not necessary to perform median section, and make an extensive examination of the bowels; but in gunshot wounds, unless the bullet is of very small size, median section had best be performed.

Should laparotomy be performed for posterior and side wounds? The same rule applies as for wounds of the anterior abdominal wall; the wound should be explored with finger, probe, or by incision, and if it leads into the peritoneal cavity, section in the linea alba should be made. Fortunately, wounds in the back and side, even when they do penetrate the solid or hollow viscera, are very much less fatal than those which enter from the front, owing doubtless to the better drainage, and to the fact that the peritoneum is absent from the posterior surfaces of some of the viscera.

We think that whilst there may be some difference of opinion in regard to the propriety of an operation in individual cases, there can be no dispute upon the propriety of operating in general when there is a probability of perforation of the intestines, or any of the other abdominal viscera. The fact appears to be well established that all penetrating wounds of the abdomen are less fatal when treated by operation than when left to the processes of nature.

ALTERNATING PYREXIA IN HODGKIN'S DISEASE.

In the *Berliner klinische Wochenschrift* of August 1st and November 7th, Eistein describes a remarkable case of lymphadenoma of the internal glands with an alternating pyrexia of most peculiar type. The patient, a man, aged nineteen years, had ten attacks of fever between the 13th of November, 1886, and the 6th of July, 1887. The pyrexial period continued thirteen or fourteen days, and the fever reached as high as 104°–105.8° F. In the intervals, which lasted, on an average, ten or eleven days, the temperature was usually subnormal. There was moderate enlargement of the spleen, no increase in the size of the external lymph glands, and, with the exception of the fever, the patient presented no special symptoms. The blood was examined, with negative result. After the 7th of July the fever became almost continuous, and death occurred with œdema and coma on the 14th of August. The autopsy revealed the lesion of lymphadenoma of the bronchial, mediastinal, and retroperitoneal groups,

with growths in the lungs, pleura, and liver. The case, then, was one of Hodgkin's disease, or pseudo-leukæmia, with an unusual type of pyrexia, which had, however, been previously described by Murchison, Gowers, and Pel, though in none of the instances on record was the alternating pyrexia of so striking a character.

What interests us particularly is the fact that Professor Ebstein regards his case as an illustration of a new disease, and writes under the caption of "Chronic Relapsing Fever, a New Infectious Disease." As the affection has nothing whatever to do with true relapsing fever, the febris recurrens, we must consider the name most inappropriate, in spite of the recurrent type of pyrexia; but we object still more seriously to any such multiplication of diseases by giving undue prominence to some one feature or symptom. The truth is, that in Hodgkin's disease the fever is very variable; some cases are afebrile throughout, more commonly there is for periods a continued fever, or the type is remittent. We have seen one case in which the fever was distinctly intermittent with paroxysms of chill, hot and sweating stages, and then we have the alternating pyrexia noted by the writers referred to above, the most remarkable illustration of which is afforded by the case under discussion. Manifestly, it would be just as reasonable, should we meet in further cases with a well-marked type of pyrexia, to describe them under the title of "chronic malaria, a new infectious disease," as it is for Professor Ebstein to make a chronic relapsing fever out of a case of Hodgkin's disease with alternating pyrexia. Nor do we think that any satisfactory classification of the cases of the disease can be made in a factor so variable and uncertain as the fever. The type of alternating pyrexia appears to be more common in cases in which the deeper glands are involved, and a knowledge of its occurrence may be a help in diagnosis, and in calling attention to this Ebstein's contribution will be of great service. We cannot, however, but regard it as a curious error in judgment that he should have described the case as a new infectious disease, and under such a misleading title as chronic relapsing fever.

Typhoid fever is, at present, epidemic in Cincinnati. The visitation is chiefly attributable to the state of the Ohio River, which has never been so low since 1881, when this disease was unusually prevalent. The death reports for the week average about six per day; the number of cases is variously estimated at 600 to 1000. The various hospitals of the city contain about 150 cases. The disease prevails in all parts of the city, in the most remote suburbs, as well as the city proper. Upon the advice of physicians most families take the precaution of boiling all the drinking water and milk. It is a common sight to see children on their way to school with bottles of boiled water slung across their backs with their satchels. There is general testimony at the medical societies that the disease is mild, though the mortality report is much larger than at any time in the history of the city. One prominent physician informs us that he has seen in private practice more cases of severe hemorrhage than in any previous experience with the disease.

Drs. Rushford and Cameron, of the Bacteriological Laboratory of the Medical College of Ohio, have succeeded, by Brouardel's method, in discovering by culture experiments, and demonstrating before the Cincinnati Academy of Medicine the bacillus of typhoid fever in the waters of the Ohio River.

No more striking illustration could be given of the progress which the Japanese have made in modern medical methods than in the *Journal of the College of Medicine of the Imperial University, Tokio*, No. 1 of which has just reached us. It is in small quarto form, and in typographical detail is not equalled by any of our exchanges. The execution of the colored lithographs, made, we notice, by native artists, is on a par with the choicest German work of the kind. The subject-matter is worthy of the setting. The principal article contains in full the research on the contagion of syphilis, by Disse and Taguchi, the preliminary account of which has already been noticed in The News. They claim to have isolated, cultivated, and successfully inoculated a microbe in this disease. A second long article is on chyluria, by Murata, assistant at the medical clinic of Prof. Bätz. A third shorter one, on the situation of the inner ear, completes the number. The *Journal* will be warmly welcomed the world over, and will take a prominent position among the scientific publications of the day.

Dr. Charles B. Nancrede has been elected Surgeon to the Jefferson College Hospital in the place of Dr. R. J. Levis, resigned.

The fact that more than 1200 practitioners of medicine have taken courses at the New York Polyclinic since its opening in November, 1882, is proof that in this country, at least, post-graduate schools meet a want.

Dr. Theodore R. Varick died November 23, 1887, at his home in Jersey City, at the age of sixty-one years. In his death northern New Jersey loses her most eminent surgeon. He was a native of New York, coming from Revolutionary stock—Col. Varick, one of his ancestors, having been on the staff of General Washington. He attended Rutger's College, and, at the age of twenty years, took his medical degree from the New York University. He

soon after took up his residence in Jersey City, and there remained during the rest of his life. He was a large man physically and intellectually, and went into the front rank in every medical and sanitary department in which he interested himself. He became remarkably skilful as a surgeon. He was for seventeen years Surgeon-General of the State, and, at the time of his death, President of the Hudson County Health Board, and Surgeon to the St. Francis and Jersey City hospitals. The cause of his death, which was unexpected, was consequent upon an accident, about a week before, whereby he sustained a fracture of both bones of the leg. He was properly treated, and was feeling so well that he undertook to receive the visits of some of his patients in his office. Suddenly he was taken with symptoms of heart-clot, and the tide of life rapidly ebbed. He left a family of six children, the eldest of whom is a physician who had been associated with him for ten years.

We understand that Professor Da Costa will deliver the next Middleton Goldsmith lecture under the direction of the New York Pathological Society some time in the coming spring.

REVIEWS.

A System of Gynecology by American Authors. Edited by Matthew D. Mann, A.M., M.D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo, N. Y. Volume I. 8vo. pp. 789. Philadelphia: Lea Brothers & Co., 1887.

In his preface the editor declares that his purpose has been to secure not only full and complete articles, but also those thoroughly practical; and in this he has been markedly successful. The impression made by the book is that of one written by practitioners of gynecology for the general practitioner who includes diseases of women in his practice. The tone of the book is not didactic, but is rather that of the concise statement of facts, with the coloring which the writer's experience has caused them to assume in his own mind. Abundant illustrations, three of them in colors, and full references to the literature of the subject add to the interest of the reader.

The Historical Sketch, by Dr. Jenks, affords an interesting exposition of the development of gynecology in the United States; among the events justly considered historical are included several of minor importance, hardly worthy of a place in such a retrospect. It is not the discovery of a novelty, but the demonstration of its value which is of sufficient merit to cause it to be remembered. Dr. Garrigues writes upon The Development of the Female Genitals and their Malformations, in a lucid and interesting manner, showing a thorough review of the literature of the subject. Dr. Coe's article on The Anatomy of the Female Pelvic Organs abounds in practical applications, and is highly valuable and interesting. Gynecological Diagnosis, Surgery, and Therapeutics are treated with satisfactory conciseness by Drs. Grandin, Dudley, and Skene; and Electricity as a medical agent is fully discussed by Dr. Rockwell. Dr. Wylie expresses his beliefs regarding Menstruation and its Disorders in terse and forcible language which commands consideration, if not acquiescence. The well worn field of Sterility is traversed by Dr. Jackson, while the editor contributes a well written article on Diseases of the Vulva. Dr. Palmer writes upon the Inflammatory Affections of the Uterus, and Dr. Reamy on Subinvolution of the Vagina and Uterus, both articles being upon subjects of the highest importance, and treated with corresponding ability. Dr. Maury and Dr. Van de Warker, in Peritoneal Inflammation and Pelvic Hæmatocele and Hæmatoma, complete the volume with articles sustaining the excellence of those which preceded.

The editor's arrangement of the present volume is excellent, and Mann's System of Gynecology, as a guide and aid for the practitioner, will prove not only valuable but highly interesting and convenient.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S. Drawings by H. V. Carter, M.D. Edited by T. Pickering Pick. New American from the Eleventh English Edition. Revised and re-edited with additions. By William W. Keen, M.D., Professor of Surgery in the Woman's Medical College of Pennsylvania, etc. Royal 8vo. pp. 1100. Philadelphia: Lea Brothers & Co., 1887.

Much as we have abridged the title-page, what we have copied from it indicates the high estimation in which this book is held by students of anatomy, an estimate which has remained for more than twenty years. Always attractive to students from the ease with which its plates can be used as a preparation for the quiz-room, this book is now presented to the profession in America, not only with the additions made to it by the English editor, but with very numerous ones made by Dr. Keen. These last are too varied for mention here. It is enough to say that the American editor has added one hundred and thirteen engravings, many of which are original. Among them we note as particularly valuable those of sections through different parts of the body and the series illustrating cerebral localization and topography. Those giving the points for the application of electricity to the muscles will also be found of much assistance to the general practitioner. Holden's *Landmarks* has also been added to the volume after revision by Dr. Keen.

The coloring of the arteries, veins, and nerves is a new feature in the book, but the American student is able to choose between an edition possessing this novelty and one in simple black and white. Well entitled as the older editions of "Gray" are to praise, it is only right to add that its value has been much enhanced by the labors of its well-known American editor, reaching as they do, not only to the illustrations but to a careful and thorough revision of the text. Indispensable as this Anatomy has been found by the vast army of physicians who have used it, and relied upon it in the past, he lacks a most important help whose shelves do not carry this new and handsome edition.

SOCIETY PROCEEDINGS.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 11, 1887.

THE VICE-PRESIDENT, WILLIAM GARDNER, M.D., IN THE CHAIR.

TREATMENT OF ULCERS BY THIERSCH'S METHOD OF SKIN TRANSPLANTATION.

DR. BELL read a paper on the above subject and exhibited a number of cases which had been treated by Thiersch's method. One case of large ulcer of the leg in an old man was healed completely in three weeks with one dressing. The ulcer had never been healed for thirteen years. Three other large chronic ulcers of many years standing had been completely healed and covered with good sound skin in less than a month. Dr. Bell said that the advantages of this method are, that ulcers which cannot be induced to heal by the usual modes of treatment could be healed in from three to four weeks without preparatory treatment and usually with a simple dressing. The method consists in the removal of the granulations and all unhealthy tissue, and the transplantation of large pieces of epithelial layer of the skin under the strictest antiseptic precautions. The important gain obtained by this method was reproduction or rather perpetuation of good sound healthy skin, which was much less likely to break down than the scar left after the usual mode of healing. The reader claimed that the operation was suitable for all kinds of non-specific ulcers of any magnitude.

DR. F. W. CAMPBELL congratulated Dr. Bell on his successful treatment, but said that while new methods might be of advantage, it was not well to discard the old ones. He himself had had phenomenal success in treating old chronic ulcers of the leg by blistering and Boynton's strapping. He had often healed ulcers in this way in three weeks, the patient going about the whole time.

DR. RODDICK exhibited a number of

CYSTINE CALCULI

passed per urethram. The patient was a delicate man æt. fifty-seven. He had a history of several attacks of renal colic. The first attack was some three years ago, and was followed by the passage of some fifty calculi, varying in size from a pin's head to a large pea. Latterly the attacks had been less severe and had not been followed by the passage of calculi.

Formerly the pain was equally severe over both kidneys, but latterly only the left was painful. There was no hereditary history of stone. Dr. Roddick remarked that the cystine calculus was exceedingly rare, less than one per cent. in European collections; Gross never met with a case. It is common in dogs. Nearly all cases reported show a history of heredity. This variety of calculus always forms in the kidney and is usually multiple. The calculus has the appearance of beeswax and is easily compressed. The specimens exhibited show a faceted appearance due to lying in contact either in the kidney, pelvis, or prostatic urethra. The majority of stones passed in this case were coated with uric acid.

DR. RUTTAN remarked that this was the only calculus that contained sulphur. He described the chemical characters of cystine and showed the tests by which it might be recognized.

DR. RODDICK also exhibited a large

PERIOSTEAL SARCOMA OF THE LOWER END OF THE FEMUR

which he had some days before removed from a man æt. twenty-four. The patient, a civil engineer by profession, was thin and very anæmic. Family history of tubercle, but none of malignant disease or tumor of any kind. No history of syphilis. Was in good health until last July, when he sustained a slight injury of the left knee, this was aggravated later on by kneeling in a canoe for several days paddling. At first the case looked like a simple or rheumatic synovitis and was treated as such by rest and blistering. When he came under Dr. Roddick's observation there was a great deal of distention of the knee-joint with very severe pain. The skin was thickened and slightly œdematous, but had not the characters of strumous synovitis. Aspiration showed thin bloody serum containing blood clots and broken-down tissue. Sarcoma was now suspected, and the patient having been etherized an exploratory incision was made into the joint, when the true state of affairs was revealed (viz., a sarcoma of the lower end of the femur), and the thigh was amputated in its upper third. Dr. Roddick said that had the patient's condition warranted it he should have preferred amputation at the hip-joint. He believed periosteal sarcoma was never liable to recur if the bone was amputated in its continuity. If the case was one of myeloid or central sarcoma he should not hesitate to amputate through a healthy part of the affected bone. The patient was doing remarkably well, and the wound had healed by first intention.

DR. HINGSTON said he, in similar cases, always removed the whole bone, when he amputated in the continuity of a bone he had always regretted it, for recurrence was generally the rule, but when he removed the whole bone recurrence was the exception.

DR. BELL thought that the chances in persistent sarcoma were quite as good if the affected bone was cut through at a sufficient distance from the tumor, as if the whole bone was removed, and in his experience the recurrence usually took place in some internal organ and not in the remaining portion of the amputated limb.

GANGRENE OF THE INTESTINE FROM STRANGULATION; RESECTION OF THE AFFECTED PORTION.

DR. BELL showed ten inches of gangrenous ileum which he had excised from a patient suffering from strangulated hernia. The history of the case is as follows:

B. D., æt. seventeen years, plumber, was admitted into the Montreal General Hospital on the evening of the 8th of November, suffering from a strangulated inguinal hernia on the right side. On Sunday, November 6th, suffered severely from pain in the upper zone of the abdomen and noticed a swelling in the right side of the scrotum. He took a dose of black draught, which caused one small motion. Vomiting set in the following morning and continued until his admission into the hospital. The patient having been placed under ether, moderate taxis was employed, and failing to reduce the

hernia, operation was determined on. On opening the sac about ten inches of small intestine were found in the canal. The constriction was incised and the bowel drawn out and examined. It was dark in color but glistening, and was distended with gas. Thinking the bowel to be in fair condition it was returned within the abdomen. The obstructive symptoms, however, remained unrelieved, and tympanitic distention of the abdomen gradually developed. The pulse and temperature as well as the general symptoms indicated peritonitis. Thirty-six hours after the herniotomy he decided to open the abdomen and endeavor to relieve the obstruction.

An incision was made in the middle line and the cavity opened. General peritonitis was present and all the small intestine enormously distended. The obstruction was found to be due to the collapsed condition of the portion of gut which had been found in the hernial sac; this was seen to be the lower part of the ileum and it was quite gangrenous, the lines of demarcation being at the points where it had been strangulated at the internal ring. The gangrenous portion was excised as well as a triangular portion of the mesentery, the operator cutting through the healthy bowel half an inch beyond the line of demarcation at either end, the lower section being about three inches from the ileo-cœcal valve. The cut ends of the intestine held in a towel by an assistant, were carefully united with sutures, the first six or eight being carried through the whole thickness of the wall of the bowel at opposite points to secure accurate coaptation, and then a continuous Lembert suture was employed. The intestines, which, on account of their distended condition, had been allowed to escape from the abdomen, could not be returned, so they were punctured with the needle of an aspirator which allowed the escape of gas and so enabled the bowels to be replaced. The abdomen was washed out with warm water, a drainage tube introduced, and the abdominal wound closed. The operation occupied one and a half hours. The patient, who was much collapsed, died two hours after the completion of the operation.

Dr. Armstrong said that he had twice returned gut in strangulated hernia, which had afterward became gangrenous. In both cases the gut had the glistening appearance of health. He, himself, was inclined to doubt the value of this sign, and in future, would not rely on it.

TUBERCULOUS DISEASE OF THE BLADDER.

Dr. Johnston exhibited the kidneys and bladder taken from a patient who had died of general tuberculosis.

The man, whose age was about thirty-five, entered the Montreal General Hospital November, 1886, suffering from symptoms of stone in the bladder, viz., frequent and painful micturition, and pain increased on movement, occasional hemorrhage at the end of micturition, etc. On examination, no stone was found. The urine was examined for bacilli of tubercle, but none found, After remaining in hospital some time, Dr. Bell performed a median cystotomy, and explored the bladder, but found nothing; patient went out with the perineal wound unhealed, and with no improvement in his symptoms. He returned about a month ago with the wound still unhealed, and in an emaciated condition. The granulations of the wound and urine were again examined, without result, for bacilli. Soon after he developed symptoms of meningitis, and died. At the autopsy, there was found a condition of general tuberculosis, tubercular peritonitis, meningitis, and pleuritis; also, tubercular cystitis. There was tuberculosis of the prostate, trigone, and wound. In the right ureter there were tubercular deposits, and in the pelvis of the right kidney. There was amyloid disease of the kidneys and liver. Dr. Johnston stated that he had no doubt at all that the first deposit of tubercle occurred in the prostate.

Dr. Shepherd said that it was a curious fact that in these cases tubercle did not appear in the lung till a late stage, if at all. In the first stages, the diagnosis of tuberculous disease of the bladder is obscure, the onset being often insidious. The three prominent symptoms were frequent and painful micturition and bloody urine. The treatment is not satisfactory. Guyon, of Paris advises cystotomy and the avoidance of catheterization. This authority regards the bleeding in these cases as analogous to hæmoptysis in cases of lung tuberculosis. Dr. Shepherd also remarked that frequent and painful micturition was often the first symptom of tuberculous disease of the kidneys, and said, that in every case where the diagnosis was obscure, the bacillus of tubercle should be searched for.

Dr. Bell said that last summer, whilst in Paris, he had seen Guyon, in suspected cases of tuberculous bladder, perform suprapubic cystotomy, illuminate the bladder, and search for the affected portion. In one case he saw him carefully scrape out the ulcer with a sharp spoon, and afterward cauterize it. He could not say what was the result of this mode of treatment.

CORRESPONDENCE.

USE OF BRAIDED SILK SUTURES IN LACERATED CERVIX AND PERINEUM.

To the Editor of The Medical News,

Sir: For several years past silver-wire sutures have been used almost universally in operations for restoration of lacerated cervix and perineum. Although nearly every authority in gynecology teaches that silver-wire sutures are the best in operations for lacerated perineum and cervix, I am convinced that the right kind of silk, properly prepared and properly used for sutures, *will accomplish as good results* as silver-wire sutures, and that there are advantages in the use of silk sutures over silver-wire sutures.

I have used silk sutures in thirteen cases with exceedingly good results, and Prof. Dunster has used it exclusively for two and a half years with most excellent results.

I claim for silk sutures:

(1) They are as easily introduced as silver-wire sutures.

(2) Easier to tie silk and adjust the parts than to twist silver-wire sutures.

(3) Much less irritation to the patient (especially in the perineum) while the sutures are *in situ*, which is important.

(4) Removal of silk sutures is very much less painful.

(5) Silk sutures give as good results as silver-wire sutures.

The *hard braided* silk should be used for the sutures (about No. 10 for the perineum, and a size or two smaller for the cervix), and should be rendered thoroughly antiseptic before and after waxing in bichloride of mercury solution (1 to 800 or 1 to 1000), or carbolic acid solution.

In tying braided silk one important precaution is necessary; it is best to make the knot with a triple tie, and the last tie to be drawn down tightly or it may become untied.

J. N. MARTIN, M.D.,
Assistant to Professor of Obstetrics and Gynecology
University of Michigan.
ANN ARBOR, MICH., Nov. 26, 1887.

NEWS ITEMS.

THE CASE OF THE CROWN PRINCE.—SIR MORELL MACKENZIE has written the following report of the case of the Crown Prince, from the time of his visit to England till his arrival at San Remo, from notes supplied by Dr. Norris Wolfenden and Mr. Mark Hovell, and the report is now published by the wish of the Crown Prince.

"After the removal of the growth last summer, and the subsequent application of electro-cautery, no recurrence of the growth took place. Some general congestion of the larynx remained, and whilst his Imperial Highness was in the Isle of Wight, a slight thickening of the mucous membrane on the posterior surface of the arytenoid cartilages near their base was observed by Dr. Norris Wolfenden, at that time in daily attendance on the Crown Prince. At one of my weekly visits I verified Dr. Wolfenden's report, and perceived that the thickening presented the form of a ridge raised to the extent of about a millimetre, of yellowish color, and extending horizontally from the outer border of one cartilage to that of the other. The action of the left vocal cord, which had been noticed in Berlin to be slightly impaired, continued in the same state. It should perhaps be here mentioned that soon after his Imperial Highness arrived in England, a marked disposition to catarrhal inflammation of the larynx and trachea, or fugitive congestion, was observed. A rather sharp attack occurred in the Isle of Wight, and this was followed by general relaxation of the mucous membrane of both the pharynx and larynx.

"The congestion disappeared while the Crown Prince was in the Highlands; and during this period the thickening at the base of the arytenoid cartilages, already described, was absorbed. On the return of his Imperial Highness to London, the condition of the larynx was on the whole satisfactory; the movement of the left vocal cord was much more free, and the voice strong, though not quite clear, owing to a slight increase in the congestion having taken place on leaving Braemar. The Crown Prince's general health was excellent.

"On September 9th a slight thickening was noticed on the posterior extremity of the left vocal cord, which increased for a few days, and then gradually disappeared, being on the 18th no longer visible. For a few days previous to the development of this thickening, the larynx generally had again been more congested. On September 13, Dr. Evans, of Paris, extracted the Crown Prince's left lower second molar tooth, which was much decayed, the fangs showing the result of a considerable amount of periostitis.

"On September 14th, an oblong thickening of the mucous membrane, about five millimetres in length and three in width, was observed by Mr. Mark Hovell nearly half an inch below the middle of the left vocal cord, and parallel with its free border. Mr. Hovell states that this swelling gradually increased in size, and when seen by me on September 22d it was nearly round, and measured rather more than half a centimetre in diameter. Two days later the Crown Prince took cold, and on the following day complained of a sense of fatigue, disinclination to take food, and great sleepiness in the daytime. On examining his throat, the left aryepiglottic fold was found to be œdematous. His temperature was 101° F. In twenty-four hours the œdema had entirely disappeared, and the temperature had become normal. Although the œdema was apparently due to cold, the possibility of its being caused by limited perichondritis was discussed at the time. The acute swelling had no apparent effect on the little thickening below the left vocal cord, which gradually became smaller, but did not entirely disappear.

"The Crown Prince continued to enjoy good health after his arrival at Baveno, and when I left Italy everything appeared satisfactory, though slight general congestion remained, as well as the thickening referred to previously. On the evening of October 17th, Mr. Mark Hovell noticed a marked increase in the congestion of the larynx, both vocal cords being of a bright red color. During the next few days the congestion decreased; but on the 21st the hyperæmia again increased in intensity and was more diffuse. On the 27th an increase was noticed in the size of the thickened surface beneath the left vocal cord, and at the same time slight general tumefaction of the left side of the larynx appeared. During the next few days the thickened surface slightly increased, and on the 31st the surface was seen to be irregular, and in one place there was a distinct spur or projection. The next day superficial ulceration of the new formation was noticed, and the left vocal cord was seen to be slightly swollen along its free edge. On the 28th the voice of His Imperial Highness was quite clear; and, indeed, in the opinion of the Crown Princess, was perfectly natural, but since this date the Crown Prince has been much more hoarse. On October 30th a slight reddish projection was noticed beneath the *right* vocal cord; this remained stationary for two or three days, then disappeared, and formed again on November 5th. On November 1st a slight enlargement of the left submaxillary gland was noticed, and this subsequently increased in size.

"On November 3d the new formation had further enlarged, and was now rather more than a centimetre in diameter, and raised to the extent of about four millimetres. The extension of the growth since it was first seen had always been upward. On the morning of the 4th a very slight œdema was noticed at the base of the left arytenoid cartilage, which disappeared in the evening, and was again present on the morning of the 5th.

"On the following day I arrived, and found the state

of the larynx such as Mr. Hovell had described to me. On the afternoon of the 8th, intense œdema of the mucous membrane covering the left arytenoid cartilage was noticed, and in the evening the œdema involved the entire fold, which was tense and red. On November 9th the patient was examined by Professor Schrötter and Dr. Krause, but, owing to the œdema, it was impossible to obtain a complete view of the new formation at the lower part of the larynx. On November 10th the patient was again examined by the same physicians, and also by Mr. Moritz Schmidt; the œdema was already much diminished, and a good view could be obtained of the whole of the larynx.

"In my opinion, the œdema is due to limited perichondritis, which in its turn has probably been set up by the growths which have been formed from time to time in the larynx. Although the nature of the growth which has lately appeared has not been determined by microscopic examination, it presents every appearance of cancer."

The *British Medical Journal* of November 19th, calls special attention to the following points in this report:

1st. The occurrence on the posterior surface of the arytenoid cartilages of a deposit, which was after a time absorbed; 2d. A swelling taking place at the site of the old growth and then disappearing altogether; 3d. A swelling forming under the left vocal cord, which first increased, then receded, and subsequently formed the base of the new growth; 4th. A swelling, or growth, under the right vocal cord.

The formation of these growths, and the total absorption of some of them, with the retrogression and subsequent development of others, points to the probability of the fact that chronic inflammation has played a considerable part in the development of the disease. It is no doubt this feature which has masked its malignant nature. It is noteworthy that the deep-seated cervical glands are not affected in this case (the superficial glands seldom are involved in malignant disease of the larynx). There is now slight swelling of the submaxillary gland, but this has only recently been observed, and is of little significance in the absence of any secondary enlargement of the lymphatic glands. That a case of cancer of the larynx should run ten months without any ulceration, except such as was produced artificially by electric cautery and operation with the laryngeal forceps is also remarkable; indeed, the healing of the wounds thus caused would seem to indicate that the affection in its early stages was not of a cancerous nature.

The Prevention of Puerperal Fever.—The health authorities of Vienna have instituted a strict supervision of midwives, in which they call upon all practitioners for aid. This is intended to cover reports and inspection of each woman to determine whether she has recently attended puerperal fever, and whether her appliances and instruments are clean.

The Effects of Melinite.—At a meeting of the Paris Academy of Surgery, on October 26, 1887, a number of cases of wounds by melinite were reported, caused by a recent explosion at Belfort. The wounds were peculiarly penetrating. The skin was very little injured, and the shock produced was out of proportion to the extent of the lesions. The wounded presented marked evidences of severe nervous shock. Death had resulted from cerebral injuries and from sepsis, leading to a suspicion that poisonous gases were generated by the explosion.—*L' Union Médicale*, Nov. 3, 1887.

The Dangers of Football.—The *Boston Medical and Surgical Journal* reports that at the Harvard-Princeton football match at Cambridge, on November 11th, which was very warmly contested, Holden, the captain of the Harvard (victorious) team, who was playing half-back, sustained a fracture of the sternum, with depression of a portion of the bone.

The Medical Investigator is the title of a journal shortly to appear, which will be devoted to the cause of temperance, from the standpoint of medicine. It is announced to be published at Louisville, Kentucky.

Dirty Floors in Living Rooms the Breeding Grounds of Bacteria.—Emmerich, of Leipzig, is quoted by the *Sanitary News* of November 12, 1887, in a series of extensive investigations he has made regarding the contamination of dwellings by accumulated filth:

He made a large number of analyses of the damping material used for filling up the space between the ceiling of one flat, and the floor of the flat above. He found an almost incredible pollution of this material. His analyses show that, to use his own words, "there exists nowhere in nature, not even in the neighborhood of human dwellings, a soil so highly contaminated with nitrogenous organic substances and their decomposition products as the damping material under the floor of dwelling rooms." The amount of chloride of sodium found in this material was on an average seven times greater than that found in the ground under leaky cesspools, and twelve times greater than that in the soil round a dung-hill, although this soil was visibly soaked with filth. When the coarse pieces of stone were separated from this material, it was found that the finer dust and sand that was left, contained even more nitrogenous matter than human excrement. "In the damping material of a single room, there was usually more excremental matter present than in a large cesspool." That all this filth is alive with microörganisms, is shown by the amounts of products of decomposition which result from their activity. Thus under the floor of one single room, Emmerich found that there were more than 6 cwt. of nitric acid in the form of nitrates. He also showed that the carbonic acid in the air of rooms left shut up and empty increased, although all other known sources of carbonic acid, such as subsoil air, etc., were excluded. The chief cause of this contamination was undoubtedly the soaking of fluids and shaking of dust through the fissures and spaces between the boards in the floor. Often, however, the rubbish which was used as damping material was contaminated from the beginning, having been taken from old houses, or rubbish heaps, such apparently as many houses in this country are built upon.

Emmerich followed up this research by another no less interesting one in connection with the same subject.

In a prison at Amberg, there had persistently occurred for years epidemics of croupous pneumonia. The last of these had attacked every seventh, and killed every twentieth prisoner. As is well known, the late Dr. Friedländer, of Berlin, discovered the presence in cases of croupous pneumonia of a species of bacterium, cultivations of which, when inhaled by, or inoculated into certain animals, produces a similar disease in them. There can thus be little doubt as to the causal connection between this organism and the disease, or at any rate certain forms of it. Emmerich examined the damping material from the infected rooms in the Amberg prison. He not only found this material full of organic matter as usual, but actually discovered Friedländer's bacterium in enormous numbers.

POISONING FROM ARSENICAL WALL PAPER.—DR. EVERETT SMITH, of Boston, reports in the *Boston Medical and Surgical Journal* of November 17, 1887, the case of a lady who, upon returning to her town house for the winter, was seized with symptoms of irritant poisoning. Although some of the wall-paper had been found to contain arsenic in considerable quantities, it had seemed at first improbable not only to myself, but to Drs. Wood and Whittier, whom I consulted in the case, that the wall-paper already found to contain arsenic could be the sole cause of all this arsenical poisoning. The paper was upon the walls of a small room on the entrance floor of the house where the patient had been very little, the parlors were on the floor above, and her chamber on the floor above the parlors. In hopes, therefore, of finding some other source of arsenic, dress goods and window draperies were analyzed, but with negative results so far as finding arsenic were concerned. Chromium was, however, found in large amounts in one pattern of dark green dress goods. I had early seen to it that all cretonnes and turkey-red material were removed from the chamber, since they are well known to be highly charged with arsenic.

The almost conclusive proof, however, that the sole cause of my patient's sickness existed in this room is as follows: The dangerous wall paper was removed while the patient was convalescent. She insisted that she was not yet strong enough to venture from home and so remained in the house, confined strictly to her room, while the work went on. After the walls had been scraped and washed, and the room thoroughly cleaned preparatory to the laying of the new paper, she ventured to look into the room but remained there scarcely ten minutes. She very soon had a return of nausea and vomiting, which lasted nearly twenty-four hours. I thereupon insisted that she go into the country and that in her absence the entire house be thoroughly cleaned and dusted. This was done, and since her return she has presented no further symptoms of arsenic poisoning.

Another member of the family was affected by the removal of the paper, his symptoms taking the form of a sharp diarrhœa. The other two members did not at any time present marked symptoms of arsenical poisoning, except a noticeably sallow complexion and a pretty constant feeling of lassitude all winter. They had, however, had more exercise in the open air than my patient.

THE CONSULTANTS AT SAN REMO. — The *British Medical Journal* describes the specialists called to meet in the case of the Crown Prince as follows:

The German specialists who have been called in to advise with Sir Morell Mackenzie as to the treatment of the Crown Prince of Germany in the critical phase on which his illness seems now to be entering are all well known to laryngologists throughout the world, though their names may not be familiar in this country. Dr. L. von Schrötter, who is Professor Extraordinary of Laryngology and Internal Medicine in the University of Vienna, is the leading teacher of throat diseases in that great school, and his reputation throughout Germany is of the highest. He was one of the pioneers of laryngology, and his name would certainly be always one of the first mentioned when the question of calling in further advice arose. Dr. Hermann Krause, though comparatively a young man as age is counted in professional life, is a distinguished teacher in the University of Berlin, and stands high in his special line. Dr. M. Schmidt, of Frankfort-on-the-Main, though not perhaps quite so well known as his two colleagues, is a sound and experienced specialist, and has, moreover, the great recommendation in the present case of having already seen and treated the illustrious patient.

CORRIGENDUM.

Page 588, 2d column, 19th line, *for* 1861 *read* 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM NOVEMBER 22 TO NOVEMBER 28, 1887.

So much of *S. O. 255 A. G. O.*, October 8, 1887, as relieves *Lieutenant-Colonel and Surgeon* CHARLES T. ALEXANDER from duty at St. Louis, Missouri, and directs him to report for duty at Fort Meade, Dakota, is amended so as to take effect on January 1, 1888.—*S. O. 274, A. G. O.*, November 25, 1887.

BROWN, PAUL R., *Captain and Assistant Surgeon.*—Ordered to Fort Niagara, New York.—*S. O. 270, A. G. O.*, November 19, 1887.

SKINNER, JOHN O., *Captain and Assistant Surgeon.*—Ordered to Fort Ontario, New York.—*S. O. 270, A. G. O.*, November 19, 1887.

RICHARD, CHARLES, *Captain and Assistant Surgeon.*—Ordered to post near Denver, Colorado.—*S. O. 270, A. G. O.*, November 19, 1887.

CARTER, E. C., *Captain and Assistant Surgeon.*—Ordered to Willett's Point, New York.—*S. O. 270, A. G. O.*, November 19, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 26, 1887.

NASH, F. S., *Passed Assistant Surgeon.*—Detached from duty at the Smithsonian Institution, and ordered to the Washington Navy Yard.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—
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ORIGINAL LECTURES.

SOME RESPIRATORY NEUROSES.

A Clinical Lecture Delivered at the Jefferson Medical College Hospital, Philadelphia, Session 1887–1888.

BY PROFESSOR ROBERTS BARTHOLOW, M.D., LL.D.

GENTLEMEN: We have for consideration to-day a most interesting example of a respiratory neurosis. Really a typical example of a comparatively rare affection, it appeals to us, not because it is uncommon, but for the larger reason that it requires a mode of treatment different from that we would otherwise find more effective. The patient is a young man, not yet thirty years old, of a well-marked neurotic constitution. His general health seems good, and the one disability for which he seeks our aid, is an apparent, or *pseudo-angina pectoris*. He has not had rheumatism, syphilis, or diphtheria, and his heart, in the intervals of the seizures, presents no evidence of disease.

The paroxysms, which began four or five years ago, then, as now, consisted in sudden pain in or about the præcordial region, and shooting thence through the chest in all directions, but especially in the left neck and shoulder; sometimes downward into the left arm. Respiration becomes gasping and shallow, cyanosis appears quickly, the countenance assumes an agonized expression, the eyes protrude somewhat, the skin grows cold, and is covered with a clammy sweat; an inhibition of the heart's movements first occurs, but presently the tension of the vessels falls, the action becomes rapid and feeble, and irregular in rhythm; a deadly faintness comes on, and lately consciousness is lost for an instant of time. Although, when the paroxysms began, the symptoms were, in a high degree, suggestive, their true significance could not be appreciated. At first simple in form and localized to the præcordial region and chest, as the case went on they increased in complexity and in meaning. New elements entered into the problem. Some twitchings of the facial muscles were observed, and, in course of time, it was seen that the faintness extended into complete unconsciousness. The question of loss of consciousness, arisen of late, has deep import. Is the unconsciousness a mere fainting, because of cerebral anæmia due to inhibition of the heart, or mere weakness of the organ? In the absence of certain symptoms which now appear outside of the chest, it would seem to be the latter. Of late, however, muscular twitchings have occurred, and the seizures are preceded by certain uneasy sensations, which, as the patient has learned to know, announce a paroxysm, but the attack itself comes on with a sudden rush and tumult.

The paroxysms, which have been occurring during the past year more frequently, have also been widening in the complex of the symptoms, of which the nerve-elements have just been mentioned, but here note, also, that pronounced disorders of digestion have appeared. Acidity, heaviness, gas eructations, constipation, etc., are complained of. Just before a paroxysm, a sensation of weight and præcordial oppression, with anxiety and foreboding, copious gas eructations, and nausea, take place, and then very quickly the angina comes.

Now that we have come to look over the case, to analyze its symptoms, and construct our theory of its nature, we see that we have the usual morbid complexus of a pseudo angina pectoris, but other phenomena obtrude themselves and demand recognition. We observe warning symptoms coming from the organs connected through the solar plexus. Shall we call it an aura? When unconsciousness occurs some twitchings of facial muscles are observed. Here then are phenomena which ally the case to epilepsy, and, indeed, more and more has it assumed the characteristics of epilepsy with the progress of time. Trousseau, in one of his admirable clinical lectures, has described such cases under the term, "masked epilepsy." I do not know of any author who has so well characterized these cases, which, beginning with an angina pectoris terminate in a well-developed epilepsy. When I read this lecture some years ago, my attention was drawn to the subject, but I have seen few examples of the malady. One of the most nearly typical examples that has fallen under my observation was that of a physician who had attacks of what was supposed to be *angina pectoris*, and they were not understood until the paroxysms became epileptic in the most pronounced manner.

It is important in respect to treatment to recognize the true nature of these attacks. The best results are had from a combination of remedies addressed to both the true seat of the malady, and to the organs suffering the most severe functional disturbances.

As the bromide of sodium is far less hurtful than the corresponding potash salt, I will direct thirty grains three times a day. As during the paroxysms it is evident that the tension of the vascular system is abnormally high, I will give the one per cent. solution of nitro-glycerine, increasing the dose from one minim until its characteristic action is manifest, at which point it should be kept for the present.

As it is very obvious that errors of diet often precipitate the seizures, and always add to their violence, a careful regulation of the food becomes essential. Indeed of all the measures we have to propose, this is the most important. The allowance of meat should be restricted to one meal, it should be fresh meat, and small in quantity; one egg may be given at breakfast; one vegetable at dinner, such as spinach, celery, lettuce, or similar non-fermentable articles; some fresh fruit at supper. The only drink should be a moderate cup of warm skimmed milk.

It is difficult to regulate the diet of these subjects;

they have fierce appetites, and a fiercer way of indulging them; but every consideration should be brought to bear that may be effective in support of their own resolution.

Very often we have here as this morning, examples of difficult respiration, arising from reflex influences at a distance from the apparent seat of morbid action. Thus, asthmatic trouble from renal disease, renal asthma. Difficult breathing, of which the first intimation comes by hoarseness, may be the initial symptom of Bright's disease. But these and others we reserve for further consideration.

ORIGINAL ARTICLES.

ON THE ELIMINATION OF SULPHURETTED HYDROGEN ARTIFICIALLY INTRODUCED INTO THE BODY.

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AND

ON THE ACTION OF SULPHURETTED HYDROGEN ON CERTAIN MICROORGANISMS.

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THE observations which form the basis of this article were begun early last spring, shortly after the publication of the so-called Bergeon treatment of pulmonary phthisis by gaseous enemata; but delay in obtaining absolutely pure cultures of the bacillus tuberculosis has deferred the completion of the experiments until now, when the interest in the subject has to a great extent subsided. Many able articles indeed, which have appeared in periodical medical literature within the last few months, have nearly covered the ground which we intended to go over, and we shall therefore consider the questions involved very briefly.

If it could be shown that a substance, innocuous as far as the human organism is concerned, could be introduced into the body and be eliminated by certain avenues, destroying in its passage morbific germs, the ideal treatment of many diseases would be to a great extent realized. If such a method were applicable to one class of diseases dependent upon the existence or multiplication of microörganisms, it might logically be assumed that other diseases could be treated in the same way; and the possibilities of such measures of treatment could hardly be exaggerated. Inasmuch as many organisms which act as morbific agents must penetrate through the lungs, it would be natural to look for some germicide which would attack microörgauisms in this situation; and the most effective way of reaching the materies morbi would be to introduce a germicide into the system by the alimentary canal or the subcutaneous tissue, provided it could be exhaled into the air-cells, and provided, always, that this could be done with safety. It was this idea, which logically followed the assertions of Bergeon, that led me to ask the assistance of Dr. Grauer in some experiments with sulphuretted hydrogen.

I proposed to leave out of the question, for the present, the apparent benefit derived by tuberculous patients from the treatment by gaseous enemata. The history of various so-called specifics for pulmonary phthisis shows with how much caution accounts of improvement in patients must be received. Much time must elapse and great numbers of cases, carefully observed under various conditions, must be recorded and analyzed before any positive conclusions can be reached as regards the results of any new method of treatment, particularly in this disease. Leaving, then, this consideration out of the question, I proposed to study the following problems:

1. Is sulphuretted hydrogen, introduced into the lower bowel, eliminated by the lungs?

2. Is sulphuretted hydrogen, injected in solution in water under the skin, eliminated by the lungs, and can it be safely introduced in this way?

3. What influence has sulphuretted hydrogen on certain microörganisms, particularly the bacillus tuberculosis?

In various communications that have recently been published on the gaseous enemata, it has been stated that sulphuretted hydrogen, mixed with carbonic acid gas and introduced in quantity into the large intestine, is eliminated by the lungs. Its detection in the expired air is very easy. A piece of white filtering paper, moistened with a solution of lead acetate and held before the mouth, will instantly reveal the presence of sulphuretted hydrogen in the breath, being discolored by the formation of lead sulphide. Gaseous enemata, after the method proposed by Bergeon, have repeatedly been employed in Bellevue Hospital. In many instances the breath has been tested during and after the enemata, and the characteristic reaction of sulphuretted hydrogen has never been observed. I made on May 2, 1887, a careful observation of this kind:

A man, thirty-two years of age, affected with pulmonary phthisis in the second stage, with considerable cough and expectoration, was the subject of this observation. He had been treated for some weeks with gaseous enemata, and thought he had received some benefit. The enemata were employed in the usual way. A bag was filled with about a gallon of carbonic acid gas freshly made and passed through a pint bottle of Sharon Springs sulphur-water, the emanations from which reacted promptly with lead acetate. Without giving in detail all the steps of the observation, I may simply state that during twenty minutes, while the injection was continued, there was no elimination of sulphuretted hydrogen by the lungs. I then substituted for the natural spring water a bottle of a saturated solution of sulphuretted hydrogen in distilled water. During fifteen minutes of this injection, there was no pulmonary elimination of sulphuretted hydrogen. The injection was then discontinued and the breath was tested at short intervals for an hour, always with negative results.

On May 5, 1887, I injected about half a fluid ounce of a saturated solution of sulphuretted hydrogen in water into the rectum of a dog, weighing 19 pounds. The breath was tested continuously during the ten minutes immediately following the injection, and then at intervals after the injection, as follows:

17, 25, 45, 60 and 90 minutes. There was no reaction of sulphuretted hydrogen.

On November 7, 1887, one fluid ounce of a saturated solution of sulphuretted hydrogen in water was injected into the rectum of a dog of medium size, and the breath was tested continuously for a number of minutes immediately following the operation. In three minutes and twenty-three seconds, the elimination of sulphuretted hydrogen began. This elimination continued for two minutes and fifty-three seconds, when it ceased. The reaction was distinct, but by no means so marked as when sulphuretted hydrogen is injected into a vein.

On April 25, 1887, I injected about one fluid drachm of a saturated solution of sulphuretted hydrogen into the stomach of a dog weighing 27 pounds, through a gastric fistula. This was not followed by the elimination of sulphuretted hydrogen by the lungs. Twenty-two minutes after the injection, the dog urinated, and part of the urine was obtained. This urine did not contain sulphuretted hydrogen.

In a number of experiments on dogs, I injected about three fluid drachms of a saturated solution of sulphuretted hydrogen under the skin of the flank, and careful and frequent tests of the breath, repeated from the time of the injection up to one or two hours after, at short intervals, failed to show the exhalation of sulphuretted hydrogen.

I have repeatedly injected sulphuretted hydrogen into the veins in dogs and have always noted a prompt elimination by the lungs; but this continues for a few seconds only, after the injection is discontinued. In an experiment made May 5, 1887, one fluid drachm of a saturated solution was injected into the external jugular vein of a dog weighing 22 pounds. The sulphuretted hydrogen appeared in the breath in three seconds after the injection was begun, and disappeared almost instantly after the injection was discontinued. The animal suffered no inconvenience from the operation. This is a repetition of an experiment by Bernard, well known to physiologists. Bernard also injected sulphuretted hydrogen, about a fluid ounce of a saturated solution, into the rectum of a dog. Elimination, in one experiment, began sixty-five seconds after the injection, but had ceased in five minutes.[1]

The following experiments were made by Dr. Frank Gruner, and are given in his own words.

EXPERIMENT I.—Small clippings of linen rags were thoroughly sterilized by being boiled in water for thirty minutes. In small watch glasses that were thoroughly sterilized by means of a dry heat of 250° C. (482° F.), there was placed liquid gelatine containing different microörganisms; namely, Finkler and Prior's comma bacillus of cholera nostras, typhoid bacillus, Koch's comma-bacillus of Asiatic cholera, and Friedländer's pneumococcus. The small clippings of rags which had been sterilized, were allowed to soak in the gelatine for ten minutes and were then carefully removed by means of a sterilized forceps and placed in sterilized tubes 4 inches long and $\frac{7}{8}$ of an inch in diameter, with both extremities open so as to allow a current of gas to pass directly through them. These tubes were then placed in a larger tube 14 inches long and 2 inches in diameter, and exposed to a strong current of sulphuretted hydrogen gas for twenty-five minutes. The gas was obtained by pouring sulphuric acid over ferrous sulphide, and then passing the gas evolved through a wash-bottle filled with distilled water. After the rags had been exposed to the gas, they were carefully removed and placed in test tubes one quarter full of liquid gelatine which became solid in a few moments. The object of liquefying the gelatine was to have the rags firmly embedded, so as to give the microörganisms all possible chances for growth. At the end of thirty-six hours, the growth of the different microorganisms was perceptible. Microscopical examination of each growth was made in order to exclude the following: First, the possibility of the growth of some other microörganism that might have lodged on the rags while passing from one tube to the other; second, the rags contain a certain quantity of sulphuretted hydrogen, which, coming in contact with the gelatine, produces a slight precipitation that to one unaccustomed to bacteriological investigations might be thought to be a growth due to microörganisms.

In contrast-experiments, the same steps and precautions were taken, with the exception that the rags were not exposed to sulphuretted hydrogen. Growth of microörganisms was perceptible in thirty-six hours.

The gelatine used in all these experiments was inoculated in the watch-glasses, by means of the platinum needle, with virus from pure cultures.

EXPERIMENT II.—Linen clippings, sterilized as in Experiment I., were soaked for two minutes in gelatine that had been inoculated twice with virus from pure cultures of Finkler and Prior's comma-bacillus and the pneumococcus. They were then exposed to a current of sulphuretted hydrogen gas for half an hour on three successive days, the object being to note the effect of repeated exposures. After the third exposure, the rags were embedded in gelatine in tubes as in Experiment I. Growth of microörganisms was observed in forty-eight hours.

In contrast-experiments, without exposure to sulphuretted hydrogen, growth of microörganisms occurred within twenty-four hours.

The delay, I think, in the growth in the rags exposed was not due to the sulphuretted hydrogen, but to retarded activity attributable to less favorable conditions of nutrition, etc.; for in sub-sequent experiments, in which rags had been kept for three days in a sterilized test-tube and were afterward put in gelatine, the growth was retarded by between twelve and twenty-four hours.

EXPERIMENT III.—Rags, sterilized and soaked for two minutes in gelatine that had been inoculated once with virus from cultures of typhoid bacillus, pneumococcus, and the comma-bacillus of Asiatic cholera, were exposed to a steady current of sulphuretted hydrogen gas and then embedded in gelatine in test-tubes. No growth was perceptible in twenty-two hours.

In contrast-experiments there was no growth.

The failure of growth in both instances was due, in my opinion, to the extreme dilution of the virus.

EXPERIMENT IV.—Rags sterilized and soaked with

[1] Bernard: Leçons sur les effets des substances toxiques et médicamenteuses. Paris, 1857, p. 59.

a gelatine that had been inoculated twice with anthrax bacillus and Koch's comma-bacillus were exposed to a current of sulphuretted hydrogen gas for an hour and were then embedded in gelatine in test-tubes. Growth of microörganisms was perceptible in thirty-six hours.

Growth of microörganisms was also observed in contrast-experiments.

EXPERIMENT V.—Rags sterilized and soaked in gelatine that had been inoculated twice with virus from pure cultures of anthrax and comma bacillus were exposed for three hours to a steady current of sulphuretted hydrogen gas and then placed in gelatine in test-tubes. Growth of microörganisms was perceptible in thirty-six hours.

Contrast-experiments also showed growth of microörganisms in thirty six hours.

EXPERIMENT VI.—Six test-tubes of liquid gelatine while cooling were exposed to sulphuretted hydrogen under pressure for two minutes and were then inoculated from pure cultures of pneumococcus, anthrax, and Asiatic cholera. Growth of microörganisms was perceptibly twenty-four hours after inoculation.

EXPERIMENT VII.—A large test-tube of distilled water was thoroughly sterilized by boiling for four hours and then exposed to a steady current of sulphuretted hydrogen gas for three hours. Ten drops of this water were added to each one of six test-tubes one-quarter filled with liquid gelatine. After the gelatine had solidified, the tubes were inoculated with typhoid, anthrax, and comma bacilli. At the end of twenty-four hours, growth of microörganisms was seen to take place along the lines of inoculation.

EXPERIMENT VIII.—Ordinary Croton water, such as is used in New York, was exposed to sulphuretted hydrogen for twelve hours under good pressure. Fifteen drops of this water were added to each one of three test-tubes of liquid gelatine, which were set aside to await results. Forty-eight hours after, I examined specimens from the tubes with the microscope, and found them filled with various kinds of microörganisms; showing that twelve hours of exposure to sulphuretted hydrogen did not affect the germs in ordinary drinking water.

EXPERIMENT IX.—Two test-tubes containing sterilized blood-serum were inoculated by the platinum wire with virus from a pure culture of tubercle bacillus and then exposed for two hours to a current of sulphuretted hydrogen gas. They were then kept at the temperature of the body in the brood-oven. At the end of two weeks, growth of microörganisms was noted over the entire surface of the blood-serum. At the same time, an old culture of tubercle bacillus was exposed to the gas for about three hours and was afterward used to inoculate two test-tubes of blood-serum. From these inoculations, beautiful growths developed in two weeks.

As far as my experiments and those of Dr. Grauer bear upon the questions proposed at the beginning of this article, the following answers may be given.

1. Is sulphuretted hydrogen, introduced into the lower bowel, eliminated by the lungs?

In the single experiment on the human subject which I have recited, and according to quite an extensive experience in Bellevue Hospital, sulphuretted hydrogen gas mixed with carbonic acid gas and injected according to Bergeon's method is not eliminated by the lungs. That it may be eliminated in small quantity under certain conditions, is possible; but the quantity of gas thus thrown off must be very small. How far the carbonic acid acts as a vehicle carrying the sulphuretted hydrogen to the lungs, I cannot say, as I have not found the sulphuretted hydrogen in the expired air.

In one experiment on a dog, there was no pulmonary exhalation of sulphuretted hydrogen after the injection of half an ounce of a saturated solution in water into the rectum. There was a slight but distinct elimination following the injection of an ounce of a saturated solution into the rectum of a dog, the elimination lasting a little less than three minutes.

It would appear from these observations, that a certain quantity of sulphuretted hydrogen introduced, even in saturated aqueous solution, may be destroyed in some way in the system without being eliminated as sulphuretted hydrogen.

2. Is sulphuretted hydrogen, injected in solution in water under the skin, eliminated by the lungs, and can it be safely introduced in this way?

My experiments show that such injections may be safely made, and that the sulphuretted hydrogen, thus introduced, is not eliminated by the lungs. I have no theory to offer as to the mode of its decomposition in the system.

3. What influence has sulphuretted hydrogen on certain microörganisms, particularly the bacillus tuberculosis?

The experiments of Dr. Grauer—which were devised and executed by himself, I having merely suggested the questions to be answered—are very definite in their results, although these results are entirely negative. These experiments fail to show any marked influence upon the organisms of typhoid fever, pneumonic fever, anthrax, cholera nostras, Asiatic cholera or the bacillus tuberculosis. They also fail to show any influence upon various microörganisms found in ordinary drinking water.

Whether the Bergeon treatment of pulmonary phthisis be or be not useful, either as a palliative or as a curative measure, extensive clinical experience must decide; but the theories by which a supposed palliative or curative influence is explained have thus far no foundation in fact. Sulphuretted hydrogen, injected according to the method proposed by Bergeon, seldom appears in the expired air. When introduced in such quantity and in such a way that it is eliminated by the lungs, the time of elimination is very brief, lasting from a few seconds to about three minutes. It is hardly reasonable to suppose that this brief and imperfect exhalation of sulphuretted hydrogen could have any beneficial effects. If the assumed benefit be due to sulphuretted hydrogen, this agent must act in some way not connected with its elimination by the lungs. It is possible that carbonic acid may aid in the elimination of matters of a character unknown, or that this gas itself may affect certain microörganisms; but our experiments do not bear upon this question. It is certain that

sulphuretted hydrogen has no sensible effect upon the growth of the bacillus tuberculosis in proper nutritive media, and that it is equally inert as regards the organisms of typhoid fever, pneumonic fever, anthrax, cholera nostras, and Asiatic cholera.

Finally, according to the *Medical Record*, the treatment of certain diseases by gaseous enemata is by no means new. "The rectal injection of 'fixed air' was recommended long ago by Priestley as of great utility in 'putrid diseases,' and Percival in 1768, and McBride in 1776, reported marvellous results from this method in pulmonary phthisis."[1]

LAPAROTOMY FOR INTRA-PERITONEAL RUPTURE OF THE BLADDER.

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The following case came under my care during the summer of 1886 while substituting for Dr. T. G. Morton at the Pennsylvania Hospital.

Case. *Intra-peritoneal rupture of the bladder; abdominal section; death.*—Edward M., aged forty-five years, laborer, was admitted into the hospital, August 16, 1886. He had been intoxicated the previous evening and went to sleep on a lounge in the house of a friend; about one o'clock in the morning, while walking in his sleep, he fell out of an open window to the pavement ten feet below. He passed his water four hours before the accident, but had been unable to pass any since, although he had a constant desire to urinate.

Upon admission the patient, a healthy-looking man of medium size, was found to have a fracture through the neck of the right femur, and as he complained of pain in the lower part of his abdomen with the desire but inability to urinate, the resident surgeon passed a soft catheter and drew off three ounces of bloody urine. When I saw him a metallic catheter was passed and a pint of bloody urine drawn off; the urine was drawn with difficulty, the catheter, as was afterward evident, having passed through the tear in the bladder into the abdominal cavity.

The condition of the patient just previous to the operation was as follows: He was very restless and had an anxious expression, his abdomen was distended and tender to the touch, he complained of pain in the abdomen and lower part of the rectum, and he had vomited twice; the respirations were frequent, his pulse 100, and his temperature 99½°.

Dr. John B. Roberts, at the time substituting for Dr. Levis, saw the case with me in consultation, and agreed in the diagnosis of probable intra peritoneal rupture of the bladder, and to the advisability of performing laparotomy as giving the man his only chance for recovering, and he also assisted me in the operation.

Operation at 8.30 P. M., nearly twenty hours after the accident. After etherization the abdomen was opened under strict antiseptic precautions, the spray only being omitted, by a small incision in the median line just above the pubes, the finger was inserted into the abdominal cavity and the tear in the bladder felt, the incision was then increased to four inches extending from the pubes upward.

About a pint and a half of bloody urine with a few small blood-clots were removed from the abdominal cavity; the intestines were found deeply injected; the bladder was contracted, with its superior surface torn completely across from side to side, the tear being, in the contracted state of the organ, about two and a half inches in length. The bladder was held forward while the stitches were being introduced by drawing upon two pieces of catgut passed through the bladder on either side of the tear, fifteen Lembert catgut sutures being required to sew it up, the bladder was then tested and found to hold three or four ounces of warm water without leaking.

The abdominal cavity was cleansed by pouring in several quarts of a warm solution of bichloride of mercury (1 to 6000), and dried with sponges. The abdominal incision was brought together with interrupted catgut sutures, a drainage tube being first inserted a short distance into the abdominal cavity, and an iodoform and bichloride gauze dressing applied. A soft catheter was passed through the urethra and left in the bladder. The time occupied by the operation was about one hour and a quarter. The pulse at the end of the operation was 120, and his general condition quite good.

On the following morning his pulse was 140 and was much weaker, the respirations were more frequent and his temperature 101°; his abdomen was tympanitic and tender to the touch, and there had been a considerable discharge of blood-stained serum through the drainage tube; several ounces of urine had passed through the catheter.

As he complained of abdominal pain and was somewhat restless he was ordered opium, and was also given small quantities of whiskey, milk, and ice.

In the evening he was worse, having vomited several times through the day.

Aug. 18th, the signs of peritonitis had become more marked, the respirations were very frequent and shallow, pulse was 160 and very weak, and his temperature was 101°; he continued to fail and died about noon, thirty-nine hours after the operation.

Autopsy.—The abdomen was much distended; the abdominal incision looked well. There was found about a half ounce of bloody serum in the abdominal cavity; the intestines were deeply injected and showed signs of peritonitis, being slightly coated in places with lymph, and two or three coils were bound together with recent adhesions. The bladder was contracted and found perfectly empty, and the stitches had all held; it was tested and held three ounces of water without leaking.

Remarks.—Death was due in this case to urinary intoxication and peritonitis, caused by the length of time the peritoneum was exposed to the urine after the injury, before the operation was performed (twenty hours).

I regret very much not having washed out the abdominal cavity more thoroughly; it was simply washed by pouring in the bichloride solution, which, of course, reached only the viscera in the lower portion of the abdomen; if the latter had been

[1] Medical Record, August 13, 1887, p. 192.

thoroughly washed out the peritonitis might have been checked.

Very little difficulty was experienced in introducing the sutures into the bladder, as the latter was drawn well forward by pulling upon the two pieces of catgut passed through on either side of the tear; the intestines were kept out of the way with sponges and gave very little trouble.

The incision, four inches in length, was found longer than necessary, as the abdominal walls contained very little fat—a three inch incision would have been long enough.

The diagnosis was made from the abdominal symptoms, the inability to urinate, and the bloody urine drawn off by the catheter; had the metallic catheter been felt for through the abdominal walls when it passed through the tear in the bladder, its tip could have been felt just beneath the belly wall, and this, with its extreme freedom of motion, would have been a positive sign of rupture of the bladder.

Intra-peritoneal rupture of the bladder is a comparatively rare injury, and has nearly always proved fatal. Of the few cases that have recovered, five were treated by abdominal section; Rivington,[1] in 1882, collected one hundred and twenty nine cases of this injury with eight reported recoveries; of these recoveries one was Walter's case of abdominal section, and another was Morris's case,[2] which recovered without any operative treatment; in the other six cases the correctness of the diagnosis has been doubted by such high authorities, Rivington himself among the number, that any estimate of the percentage of recoveries in different methods of treatment other than by laparotomy, is valueless. Moreover, in the light of modern abdominal surgery, the treatment by laparotomy is the only one that offers any reasonable prospect of success.

In Sir William MacCormac's table of cases of abdominal section for rupture of the bladder he gives sixteen cases in which this operation had been performed up to that time; in two of these the rupture was extra-peritoneal, and in one other there seems to be doubt of its having been intra-peritoneal; therefore, leaving out these three cases, and adding the one since reported by Mr. Holmes[4] (successful), we have fourteen cases in which laparotomy has been performed up to the present time for the relief of this injury, with five recoveries, namely, the two cases of MacCormac's, and one each by Walters, Walsham, and Holmes. Out of the fourteen cases three have been operated upon in this country, with one recovery, that of Walters. Of the five recoveries, in one the rent in the bladder was not sutured, but abdominal drainage, and a catheter tied in the bladder were relied upon; in the other four cases the tear was sewed up with the Lembert suture, five silk being used in three of them, in the other one the material used is not stated.

Of the nine fatal cases, in three some of the bladder sutures were found at the *post mortem* to have given way, and in two of these at least catgut had been used for the sutures; one of the other cases died from peritonitis, the bladder wound not having been sutured; one died from exhaustion following a secondary hemorrhage from a perineal wound, perineal cystotomy having been performed, and one from suppression of urine; of the other three cases two died from shock, one of them having the bladder injury complicated with a fracture of the pelvis, and the remaining case (my own) from urinary intoxication and peritonitis.

From the study of these few cases I think we are justified in drawing the following conclusions: Silk is the best material for the bladder sutures, catgut not being safe; the Lembert suture should be used, and the muscular, as well as the peritoneal coat, included in the stitches. If difficulty is experienced in getting at the tear in the bladder to introduce the stitches, as quite often seems to be the case, an air tampon can be passed into the rectum and distended, as was done by McGill, to raise the bladder out of the pelvis; or the peritoneum can be divided at the sides of the bladder, as was done by MacCormac in both of his cases; or the bladder can be drawn forward by the method which succeeded perfectly in my case, care being taken not to include the mucous coat in the material used for the traction.

Holmes thinks it unnecessary to test the bladder wound after it has been sutured, by injecting fluid into the bladder through the urethra, but it can do no harm, and in two cases at least, in which it was so tested, leaks were found and remedied by additional sutures. The abdominal cavity should be thoroughly washed out before closing, either with warm water or a weak antiseptic fluid.

Cystotomy should not be performed unless the rupture is extra peritoneal also. MacCormac advises, instead of leaving a catheter in the bladder, to draw off the water every three or four hours with a soft catheter; this certainly would be an advantage if it is safe, as it would seem to be, for it was done in two of the successful cases, and in one of the others it was unnecessary, as he passed his water voluntarily from the first; but if any doubt is felt, the catheter can be left in for a few hours until some union has taken place between the peritoneal surfaces.

Although abdominal section for this injury is hardly alluded to in medical works, yet from the recent great advances made in abdominal surgery I think no surgeon of the present day would hesitate to perform laparotomy for the treatment of intra-peritoneal rupture of the bladder. The future of this operation, I think, is very bright, and I believe it will show more successful results than abdominal section for any other form of intra-peritoneal injury, saving the large majority of cases from what was considered, but a very short time ago, a necessarily fatal injury.

[1] Rivington. Lancet, 1882.
[2] Morris. Brit. Med. Journ., 1887, p. 454.
[3] Brit. Med. Journ., 1887, i. 1396. [4] Lancet, 18 [illegible], p. 123.

A HEAT CENTRE IN THE CORTEX CEREBRI. A PRELIMINARY NOTE.

By ISAAC OTT, M.D.,
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FROM a series of researches upon the lower animals, I am enabled to state that a centre exists about the juncture of the supersylvian and postsylvian fissures,

which, when mechanically destroyed, causes a rise of temperature, persisting for several days. The increase of temperature is from three to four degrees, and is caused by an increased production of heat. This augmentation of heat-production continues at the end of twenty-four hours after the date of lesion of the brain, as measured by the calorimeter of d'Arsonval, although the weight of the animal is falling.

It is well known that at the anterior part of the cortex, just posterior to the cruciate sulcus, Eulenberg and Landois have also discovered a centre which causes a rise of temperature, especially in the extremities of the side opposite the lesion, but not in the trunk. The centre in the postero-lateral part of the cortex causes an increase of temperature in all parts of the body. Details will be published hereafter.

CASE OF CEREBRAL ABSCESS; OPERATION; RECOVERY.

By L. D. WILSON, M.D.,
OF WHEELING, W. VA.

THE cavity of the abdomen having at length been pretty thoroughly ransacked, it is evident from the recent tendency of enterprising surgery, that the cranial cavity will shortly have to undergo a similar experience. As a contribution to the results already attained in this direction, the following case is reported. It is proper to state that the history, up to a little more than a week prior to the operation, was obtained from the patient's mother, who until that time had resided in a distant city, and it is somewhat unsatisfactory on certain points, owing to the fact that a severe domestic affliction overtook her during the progress of the case, which distracted her attention in another direction for a considerable time. It is reasonably certain, however, that the account there given is correct in every material particular.

CASE.—J. J., a well developed boy, eleven and a half years old, while snow-balling, in the latter part of January, 1887, fell, striking his head on a railroad coupling-pin. He was for a short time unconscious, but had recovered consciousness when brought home about two hours afterward. It was found that he had sustained a scalp-wound about a third of an inch in length, penetrating to the bone, its situation being on the right side of the head, two and a quarter inches above the outer orbital angle, one and three-quarters inches to the right of the median line, and one and three-quarters inches anterior to the coronal suture. It had bled freely, to restrain which cold water and snow had been liberally applied before he was taken home. No signs of injury of the skull were observed. Recovery seemed to take place promptly, and the boy continued to go to school.

About ten days afterward his appetite began to fail, and on the fifteenth day after the accident, he complained of severe pain in the head and shivering. This was followed during the day by vomiting. For a considerable time after this, the stomach continued to be extremely irritable, so much so that, to use the words of his mother, "nothing would lie on it for five or six weeks." Then the vomiting rather suddenly ceased and did not return. In a week after the vomiting began, the pulse-rate had fallen to 40, and a week later it rose again to 70–80, at which it remained. The pain in the head, which during all this time had been severe and continuous, now began to be intermittent, but at the same time very excruciating. It was always complained of as being especially severe in the *teeth*, and a part of the time there was also pain in the *right* hip. About four weeks after pain and vomiting began, convulsions set in, at first five or six a day, gradually diminishing in number to two or three a week, until about July 1st, when they began again to be more frequent and severe. The convulsions were early followed by paralysis of the *right* arm and loss of power in *both* legs, but these symptoms disappeared about the 1st of June, up to which time the boy had been confined to bed. After this date he was able to walk about, but would fall suddenly when convulsive attacks came on, and his gait was awkward at all times. As soon as the vomiting ceased he began to eat voraciously, and a great increase in flesh followed; the abdomen became enlarged and the face lost expression.

About the 1st of July, he was brought to this city and placed under the care of Dr. George Baird. At this time, in addition to the symptoms first detailed, he presented the following. The face was slightly drawn to the *left; right* eye totally blind, and very great impairment of vision in the *left;* both pupils dilated; a slight convergent squint; noises and impaired hearing in right ear; complete loss of sense of smell; tongue partially paralyzed, but sense of taste not affected; urine scanty; sleep disturbed; speech slow; some mental dulness, but no impairment of memory. The symptoms being clearly referable to the preceding injury, it was speedily determined that an operation offered the best chance of relief, and accordingly, on July 9th, at the instance of Dr. Baird, and with the assistance of himself and his son Dr. R. M. Baird, the skull was trephined at the site of the original injury. The cicatrix was found to be somewhat depressed and very tender on pressure. On reflecting the soft parts, the external table presented no evidences of injury except a small perforation sufficient to admit a small probe, which extended through the entire thickness of the bone. On removing the disk of bone no change in its internal surface was observed except the small perforation mentioned. The dura mater, which bulged moderately into the opening, was then incised with a narrow bistoury, and immediately a jet of pus spurted out a distance of three or four feet, and so continued for several seconds until the opening was enlarged with scissors. It then flowed out freely, and at a moderate estimate the quantity discharged was fully three ounces. When the flow ceased, a drainage tube was inserted and the scalp-flap replaced and sutured.

The wound discharged freely for several days, when the tube was removed and the wound healed promptly, except at one point where a small fistulous opening remained for a time, occasionally discharging small quantities of serous fluid. It permanently closed in about a month.

As a result of the operation, the pain and convulsions at once ceased, the boy began to sleep well, the appetite became natural, the superabundant flesh gradually disappeared, the natural expression of countenance returned, vision in the left eye improved, and returned in the right eye to a limited degree, hearing in the affected ear became much better, there has been a slight return of the sense of smell, and the functions of all the paralyzed muscles have been restored. The boy seems to have entirely recovered his usual health. His pupils are still moderately dilated and there remains also a slight squint.

Through the kindness of Dr. W. S. Hutchins, of this city, I am able to present the following report of an examination of the eyes made by him at my request.

"*October 15, 1887.* Pupils considerably enlarged. Examination with test-types shows R. $\frac{1}{200}+2.25$ D. $=\frac{8}{200}$. L. $\frac{2}{200}+2.25$ D. $=\frac{8}{200}$. Dilated pupils with duboisia, which did not alter above result with test-types. Ophthalmoscopic appearance as follows: Right eye: cornea, iris, and media normal; papilla white, much swollen; central vessels appear to emerge from apex of a cone, the base of which spreads far beyond and obscures the disk entirely. Vessels diminished in size and tortuous, can be clearly seen over swollen papilla, but much less so over retina, which is infiltrated and has decided lack of transparency. There are dense opacities seen along the line of ascending vessels, in upper nasal quadrant—glistening patches with striated edges. In upper outer quadrant, quite a collection of these brilliant spots or opacities near the equator. In the lower hemisphere, these spots are scattered here and there over the retina, between the vessels mostly, but occasionally being over and hiding a portion of the vessel from view. Left eye: cornea, iris, and media normal; papilla very nearly normal; outline of disk clear; vessels, however, are smaller and tortuous; retina infiltrated, but less so than that of right eye: few small white shining patches scattered over surface of retina with an occasional spot along course of vessel; one small collection lies near the equator on the nasal side of the disk."

I have had opportunity during the past three or four years to examine two cases of cerebral abscess, post-mortem, both the result of external violence. Both of these were associated with slight fracture, one involving the external table only, the other including both, with a small, depressed, pointed fragment pressing upon the dura mater. In the first of these, a small abscess containing about a drachm of pus was found in the brain beneath the seat of fracture, and three others of similar size, and not communicating with the first, or with each other, were found at varying depths in the same hemisphere. Operative measures here would no doubt have been disappointing, as neither the presence nor site of other abscesses than the one primarily sought for would likely have been suspected in time to permit successful interference. In the latter case, a single large abscess was found in the cerebrum beneath the external wound, and in addition there was a considerable extravasation of pus between the brain and dura mater, causing marked flattening of the convolutions. An early operation in this case would have afforded as fair a chance of success as in the one here reported.

NOVEMBER 7, 1887.

DIABETES MELLITUS IN AN INFANT.

BY J. Y. DALE, M.D.,
OF LEMONT, PA.

THE rarity of diabetes mellitus during infancy is probably a sufficient excuse for reporting the following case:

The patient, a female child, aged twenty-one months, when first brought to me for treatment, on February 13, 1887, did not seem very ill, and the symptoms, as related by her mother, indicated slight gastro-intestinal derangement. Ten days subsequently the child, having grown worse, was once more prescribed for, but was not again visited until March 1st, by which time the disease had developed to such an extent as to cause its true nature to be easily recognized.

The child had been weaned at the age of nineteen months, and the mother now recalls that thereafter it drank water freely, but the thirst and frequent micturition became prominent only during the latter part of February.

At this time (March 1st) the following symptoms were present: she had constant thirst during the daytime, passing a large amount of urine, which her mother said was "sticky," and had a sweet odor. During the night the thirst was not so urgent, and she slept well; appetite and digestion good; bowels moved naturally; abdomen prominent; was losing flesh and strength rapidly; sometimes was bright and playful, but generally inclined to lie in the cradle during the greater portion of the day.

For obvious reasons it was difficult to estimate the quantity of urine passed, or to procure any for examination; but, on the third of March, a sample was furnished, which was of a pale straw color, acid, with a specific gravity of 1038. Heat and nitric acid produced a slight flocculent deposit, and Trommer's test showed a large percentage of sugar.

On March 4th the patient grew worse rapidly; on the 5th there was great dyspnœa, with short, quick respirations, followed by drowsiness and deep coma—death occurring on the 6th.

In endeavoring to find a possible cause for the disease, it was ascertained that the child had several hard falls on the back of her head during the summer of 1886, from which she suffered severely.

HOSPITAL NOTES.

TREATMENT OF TYPHOID FEVER IN THE PHILADELPHIA HOSPITALS.

PENNSYLVANIA HOSPITAL.

DR. DA COSTA does not adopt any specific plan of treatment, although he generally administers the mineral acids; of these he most often prescribes nitro-muriatic acid, twenty drops of the dilute acid every fourth hour. He does not interfere with the action of the bowels, unless the discharges exceed three, when

he is most apt to order opium, in the shape of suppository.

He insists upon the patient being fed with liquid food every two hours during the day-time, but not quite so often at night. He generally begins with stimulus in the second week of the disease, taking as his guide the state of the first sound of the heart. Rarely, however, does he give more than from eight to ten ounces of whiskey in twenty-four hours.

The patient is sponged with cool water twice daily, oftener if the temperature exceed 103°. Under these circumstances, too, an occasional decided dose of quinine, or antipyrine is resorted to, particularly if the high temperature be in the morning or show signs of persistency. He is an advocate of being very watchful for complications, and for their early treatment. Late in the fever and during convalescence he generally directs quinine.

Philadelphia Hospital.

Dr. Tyson's treatment of typhoid fever is mainly a symptomatic one. Placing the patient upon a milk diet from the outset, and continuing it until convalescence is established, symptoms are treated as they arise. Diarrhœa is preferably controlled by nitrate of silver and the extract of opium, one-quarter grain of each three or four times a day. In more obstinate cases of diarrhœa where this treatment fails, although seldom necessary, the more powerful astringent acetate of lead, and more rarely tannin, is substituted for the nitrate of silver. Abdominal pain and tenderness are treated with poultices in addition to opium.

High temperature (104° to 105°) is combated by sponging the body. Persistent temperature above 105° is treated by wrapping the trunk with cloths wrung out in iced water, which are renewed every hour or half hour, and even oftener if necessary, the temperature under these circumstances being taken hourly. Quinine is given in almost every case, not as an antipyretic, but as a tonic and stimulant in doses of from six to sixteen grains daily. The stage of dry tongue is treated with turpentine in doses of ten drops every three hours.

Alcoholic stimulants are used in almost every case as required: moderately in mild cases, and in full doses in severe cases, frequently half an ounce every two hours. Sometimes larger doses are given. *Very high temperatures are regarded as demanding the fullest stimulation.* Dr. Tyson has used largely the modern antipyretics, thallin, antipyrin, and antifebrin, but considers them inferior to the iced cloths. Of these antipyretics, however, he prefers antifebrin as less alarming in its effects, and equally efficient with the others in reducing temperature.

Dr. E. T. Bruen conducts his treatment without reference to the administration of specifics. During the first few days, especially in the fall of the year, when malarial influences prevail, it is customary to give for one or two days full doses of quinine for diagnostic purposes. If the continued nature of the fever is demonstrated an expectant plan of treatment is inaugurated, which in mild cases is continued throughout the course of the disease till its termination.

If the temperature exceeds 104°, sponging with cool or cold water is the means usually adopted. The sponging must be repeated every few hours. Sometimes cold water in rubber bags is applied to the back of the head and abdomen. The cold bath is reserved for those exceptional cases in which the high temperature seems to be influencing the nervous centres. The cold water bath he believes can be employed in the early stages of the fever with more safety than later on, since the vasomotor centres are much more responsive and dangerous congestions of the viscera are avoided. The administration of antipyretics, such as antipyrin or antifebrin, so useful in the zymotic fevers of childhood or in the hectic of consumption, is to be avoided in typhoid fever for fear of disturbing the activity of the stomach. When the typhoid state is marked, associated with high temperature, the occasional use of antifebrin, in five grain doses, is desirable and preferable to the cold bath. But persistent systematic sponging of the surface of the body in the usual order is the safest and best means in his hands of reducing temperature in typhoid fever. Quinine is employed in tonic doses, but not as an antipyretic.

Great stress is laid upon the administration of nourishment. From four to six ounces of milk should be given every two hours for eighteen hours out of the twenty-four. An interval of five hours once in the twenty-four should be secured to foster the digestive powers. Care should be taken to prevent the coagulation of the casein by dilution with Apollinaris or lime-water; one or two raw eggs may be administered every other day. This method of diet is relied upon till convalescence is inaugurated, when the beef broths, prepared with some cereal, are allowed. The importance of delaying the use of meats until the temperature has been quite normal for more than a week, cannot be overestimated, and the first solid diet permitted to convalescents is farinaceous in character.

When diarrhœa manifests itself, nitrate of silver in $\frac{1}{8}$th grain doses with $\frac{1}{24}$th of ext. opium is given every four hours, with opium suppositories, if necessary, in addition. In the majority of cases this is sufficient; but acetate of lead is resorted to in case of failure. Turpentine in emulsion (with muriatic acid in cases in which silver is not used) is always employed as soon as the typhoid state begins. The general stimulative properties of turpentine, aside from its local effects, render it invaluable in a majority of cases. Constipation of the bowels must be avoided, and every other day at least the bowels should be moved. Enemata, carefully given, seem to him the best mode of securing the desired end.

Internal congestions are antagonized by changing the position of the patient, by turpentine stupes, and by cupping the chest when the lungs are the organs involved. A cotton jacket neatly made and applied, is very useful under these circumstances. Hemorrhages from the bowels are treated with opium and acetate of lead. In order to stimulate the circulation whiskey is given early in the history of those cases in which high temperature marks the reception of a full supply of the typhoid poison, and the advent of the initial symptoms of the typhoid state are carefully looked for even in those patients in whom the mild character of the symptoms does not seem to call for stimulation. Those patients who have been habitual free consumers of alcohol require the largest amounts of this drug during typhoid fever. It is important, whenever practicable,

to suspend the medicine, as well as the food, for one five-hour interval in the twenty-four in order to avoid overtasking the stomach.

EPISCOPAL HOSPITAL.

DR. FREDERICK P. HENRY, in treating the cases in his wards, seeks to control diarrhœa and allay its attendant peristalsis; to subdue nervous excitement, and to keep the temperature within moderate bounds. To accomplish these ends, the nutrition, stimulation, and medication of the patient receive the most careful attention. While the fever lasts, the diet is altogether liquid and consists of milk with lime water, and animal broths. In giving these substances he endeavors to proportion their amount to the patient's digestive powers, for, to quote the language of Collie, without fully accepting it "pints of milk and eggs in the stomach or bowels undigested are about as useful there as a cannon ball."

When convalescence begins and farinaceous foods are first administered, a slight rise of temperature is the rule. This does not contraindicate their continued employment, but may be regarded as physiological.

Stimulants are not given as a matter of routine, but only *pro re nata*. It is seldom that more than six ounces of whiskey are given *per diem*, and a certain number of mild cases receive no alcohol whatever. When diarrhœa is obstinate, port wine is substituted for whiskey.

Heroic measures have never been in vogue at this hospital, and, therefore, an attitude of "masterly inactivity" was preserved during the period of the cold bath craze. A more gradual, and, therefore, a more physiological effect, certainly one more soothing to the nervous system, is obtained by repeated sponging with tepid water. The latter method may be compared to a hint; the former to a denial, and in dealing with men's bodies as with their minds, suggestion, so to speak, is better than contradiction.

Some ten years ago, quinine was given in large amount—gr. xv to xx in the course of an hour—for its antipyretic effect, but this method was soon abandoned, and for several years the doses of this drug have not exceeded gr. xij *per diem*. To this extent it has been, until quite recently, administered as a matter of routine. Antipyrin and antifebrin have been thoroughly tested, and the opinion with reference to them is that they should be used with caution and reserved for emergencies of hyperpyrexia. The rapid descent of temperature produced by these remarkable agents has been, in rare instances, attended with a somewhat alarming condition of collapse. Fifteen grains of antipyrin given in three doses in the course of a half hour are, as a rule, sufficient to produce a decided effect, and Dr. Henry possesses a temperature chart, which shows that, on several occasions, five grains of antifebrin have caused a defervescence of from 4.5° to 5 F. In another chart a fall of nearly 6 (from 103.6 to 98) was effected by the same dose. A decided impression upon the temperature has often been made by doses of 2.5 grains.

The benefits to be derived from turpentine are problematical, which is not to be wondered at, when it is recalled that the gastric mucosa is always in a hyperæmic or catarrhal condition, and has been more than once observed to be the seat of the specific typhoid deposit and ulceration. Accordingly, this drug is but little used. Opium suppositories are mainly relied on to check excessive diarrhœa and allay peristalsis, and, when they prove insufficient, astringents, such as acetate of lead and gallic acid, are given *per os;* a moderate diarrhœa is never interfered with. By moderate, as here employed, is understood from three to six gruel- or mush-like evacuations in the twenty-four hours. The same drugs that are used to control diarrhœa are, with the addition of ergot, administered in case of intestinal hemorrhage. When tympany is great, powdered charcoal and enemata of tepid water have been found of decided benefit.

The treatment outlined above may be described as symptomatic and expectant. It is, in no sense of the word, specific. The latter adjective may be applied, with propriety, to measures which have as their object, the shortening of the course of the disease, or the mitigation of its severity, and which are addressed to the specific intestinal lesions. Such measures have not been neglected in the Episcopal Hospital. Nitrate of silver, carbolic acid and iodine, and Labarraque's solution have been systematically tested, but Dr. Henry believes them to be, one and all, inferior to thymol. He has given his experience with this drug in a recent contribution to THE MEDICAL NEWS (Sept. 3, 1887), to which the reader is referred, and, since that time, he has received confirmation of his statements from several sources. "The favorable effect of the drug was evinced by a steady descent of the temperature, by a gradual diminution in the daily number of stools, by the absence of mental excitement, and, most conspicuously, by the clean, moist tongue presented in every instance. . . . I have always prescribed the thymol in pill, of which the best excipient is medicinal soap, and, so far, have not given more than thirty grains in twenty-four hours, two $2\frac{1}{2}$ grain pills every four hours. This is a small dose, but I have seen no reason to increase it. This may be done, however, with perfect safety, and, perhaps, with still better results."

Quite as good results have been claimed for naphthalin, but, so far as he knows, it has not been used in the Episcopal Hospital, and, other things being equal, the comparative innocuousness of thymol should entitle it to the preference.

HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

DR. PEPPER holds that there is no disease more influenced than this in its later course and result by the management of its initial period. Whenever there is the least suspicion that typhoid fever is beginning the patient should have the benefit of the doubt, and from that moment should be treated with strict thoroughness. Sometimes this will induce abortion of the case, for it is one of the diseases which is, so to speak, self-perpetuating, owing to the continual development of the materies morbi in the intestinal canal so long as the contents afford a suitable culture medium.

This condition is much affected by the diet, and by agents which influence the lesions of the intestinal glands. It is well to repeat that from the earliest moment we must insist on absolute rest. Much harm is done by postponing for two or three days the necessary

confinement to bed. So should an absolute restriction of diet be imposed at once. It seems to Dr. Pepper that the intestinal canal is kept in the best condition when from the earliest hour the diet has consisted exclusively of milk, light gruels or broths, and pure water. Milk may seem to disagree, but it will then usually be found that it has been given in too large amounts or at too short intervals or that to enable it to be digested it must be diluted or peptonized. For patients with typhoid fever must be fed, not on theory, but according to the observed effects of the food given. Tympany and diarrhœa are often the result of excessive or improper feeding, although more commonly they may be caused by the enfeebled state of the muscles of the intestinal and abdominal walls, and by the lesions of the mucous membrane. Under the influence of the unqualified dictum that fevers should be fed, a dictum much more universally applicable to typhus than to typhoid fever, many cases of the latter are injured by injudicious feeding. Not only may tympany and diarrhœa be promoted thereby, but the accumulation of imperfectly digested organic matter in the bowels may favor the multiplication of the specific materies morbi, and also the development of ptomaines. This question of feeding is, therefore, the fundamental one in typhoid fever, and should be treated with caution and minute attention in each case.

Next in importance seems the administration of some remedy directed to the invariably present lesion of the intestinal glands. Drugs which exert a sedative astringent effect, which do not hurt the stomach, and which are antiseptic either directly or by their action on albuminoids, would seem to be indicated; and Dr. Pepper thinks that some such remedy should form a part of our treatment of every case of typhoid fever, from the earliest hour when we suspect the nature of the case. Creasote, carbolic acid, iodoform, mineral acids, especially muriatic and sulphurous, and nitrate of silver, suggest themselves. In the great majority of cases he much prefers nitrate of silver, and since he revived the use of the remedy in typhoid fever it has been employed so extensively and with such admirable results as to have established its value. It is given from the outset, in doses of gr. $\frac{1}{6}$ to gr. $\frac{1}{3}$ thrice daily, combined with small amounts of opium, or belladonna, or nux vomica, according to special indications. He has come to believe that the appearance of dangerous symptoms is rendered less frequent, and the entire course of the disease rendered more favorable by the early use of this remedy in conjunction with an early insistance on absolute rest and carefully adjusted feeding.

When the typhoid symptoms become pronounced, especially the dry, brown, tremulous tongue with weak heart, and paretic tympany, he substitutes, or adds, turpentine. When the tongue remains moist but is flabby and white coated, the bowels torpid, and the secretions scanty, the mineral acids with strychnia in solution seem indicated. Space forbids mention of the obvious indications in certain cases for other remedies of this group. Alcohol is required sooner or later in most cases of typhoid fever, yet he never prescribes it except when definite indications call for it. These indications are sought in the character of the cardiac action, of the nervous symptoms, of the digestion, and of the pyrexia. By withholding it until called for, and then giving it in small doses, and by cautiously increasing the dose and strength of the preparation used, we secure all possible benefit, and avoid the harm which follows here, as elsewhere, its excessive or untimely use.

Nearly always also there arises in the course of typhoid fever the necessity of controlling the pyrexia. But this necessity will be less frequent in proportion as the elements of treatment already insisted on are early and thoroughly attended to. So long as the temperature remains reasonably low, 102½° to 103°, and no nervous or cardiac symptoms appear attributable to the mere pyrexia, we need pay no special attention to it. But at any time, even during the earliest days, the fever may reach a point requiring interference. If quinine has been given in moderate doses, as is often the case, one or two full doses are now used, but recent experience had led to a preference for antipyrin when only an occasional antipyretic effect is required, or to the external use of cold water by sponging or affusion when the tendency to hyperpyrexia shows more obstinacy.

Dr. Osler believes a plan of armed expectancy to be, in the present state of our knowledge, the most rational. The majority of the cases require little or no medicinal treatment. The routine of a restricted diet under the watchful care of an intelligent nurse, meets the *indicatio morbi*.

No initial purge is given, as the cases are never brought to hospital very early, and constipation is not dreaded. An acid mixture is sometimes ordered, or dilute hydrochloric acid is added to the water, which is given freely. As it is possible that the defective elimination of the products of regressive tissue changes may be, in part at least, the cause of the so-called typhoid symptoms, every effort is made to keep active the skin and kidneys. Repeated spongings and an abundance of fresh cool water to drink, answer the purpose.

A milk diet is ordered—about three pints in the twenty-four hours. Very exceptionally it has to be artificially prepared. An examination of the stools will often indicate if too much milk is taken, or if it is not digested. Warm milk is less apt to produce flatulence. Broths and beaten-up eggs are allowed in mild cases.

When the fever reaches 103°–104°, the spongings are more frequently used. If it rises higher—104°–105°—the wet pack is ordered, or a dose of antipyrin or antifebrin, either of which acts promptly. The cold-water treatment is specially indicated in those cases with profoundly ataxic symptoms, though all the features in this state are not due to the pyrexia.

For diarrhœa, when excessive, aromatic sulphuric acid, bismuth, or naphthalin is ordered. For tympanites, turpentine stupes, turpentine internally, creasote, or naphthalin. Constipation is disregarded unless it persists longer than seven or eight days, when a saline purge or an enema is ordered. The severe headache of the early stage may demand leeches. Bromide or chloral will usually overcome the troublesome insomnia of certain cases.

When there are indications of heart failure, alcohol is given, and, if necessary, in large doses. Camphor, strychnine, and ergot supplement, but cannot replace, alcohol in this condition.

Should hemorrhage occur, opium is given and an ice-bag placed on the abdomen.

A return to ordinary diet is permitted ten or twelve days after convalescence is established.

JEFFERSON MEDICAL COLLEGE HOSPITAL.

DR. J. C. WILSON treats his cases of enteric fever by the systematic use of laxative doses of calomel during the first ten days, and by carbolized iodine, as originally suggested by Professor Bartholow, throughout the course of the disease. The most careful attention is given to the details of nursing, dietetics, and hygiene, and symptoms are treated as they become prominent.

Due regard being had to the peculiarities of individual cases, the general plan is as follows:

Upon the evening of admission the patient receives seven and a half to ten grains of calomel in combination with ten grains of sodium bicarbonate, at a single dose. If the case be still in the first week, which is not usual with hospital patients, this dose is repeated every second night until its third administration; if already in the second week, a single dose only is given. After the tenth day it is given cautiously or omitted altogether. If there be constipation, the first dose of calomel is followed by two or three large stools mostly of the consistency of mush, the later doses by stools decidedly liquid. Diarrhœa is not regarded as a contra-indication. On the contrary, it almost always becomes less troublesome after the action of the mercurial. During the subsequent course of the disease, constipation is not allowed to continue at any time beyond the third day; but is relieved, as a rule, by an eight ounce enema of warm, thin gruel, slowly injected, or exceptionally by a five, or seven and a half, grain dose of calomel; the choice being influenced by the character and prominence of abdominal symptoms. Under this plan of treatment diarrhœa is not commonly excessive. When necessary, it is treated by one grain suppositories of the aqueous extract of opium.

From the beginning the patient receives at intervals of two hours during the day, and three hours during the night, and immediately after the administration of nourishment, two or three drops of a mixture of two parts tincture of iodine and one part pure liquid carbolic acid. This dose is administered in an ounce of iced water.

Unless the temperature exceeds 104° F., the fever calls for no special treatment, beyond cold sponging, which is practised in every case at least twice in the twenty-four hours. A higher temperature receives prompt attention.

After trial of the list of new antipyretics, the choice is antipyrin. It is used in single doses of ten to fifteen grains, and repeated when the temperature again rises beyond 104° F. If this remedy fails of its effect, large compresses of several thicknesses extending across the chest and abdomen from the neck to the pubes, and freely wet with iced water, are used. The gradually cooled bath is held in reserve.

Alcohol has no necessary part in the routine treatment of enteric fever. Many cases do not require it; some are unquestionably benefited by it; while to a considerable proportion it is an absolute necessity. Dr. Wilson believes that the employment of alcohol in the treatment of fevers should be regarded not as a dietetic but invariably as a medicinal measure.

Space does not permit the discussion of the treatment of complications, nor of the management of convalescence. If perforation occurs during or after the period of defervescence, namely, in the fourth week or later, laparotomy should be performed.

MEDICAL PROGRESS.

CANCER OF THE LARYNX.—The Paris correspondent of the *Lancet* of November 26, 1887, writes that M. TILLAUX showed a patient at the Academy of Medicine upon whom he had performed tracheotomy five months ago for the relief of suffocation due to cancer of the larynx. Since then there has been, as is generally the case soon after an operation of the kind, a partial retrogression of the tumor, and the patient has resumed his occupation, having recovered his appetite, strength, and spirits, and gained seven pounds in weight. M. Tillaux said he made this communication because the question as to the best line of conduct in such cases is still open, as is shown by M. Schwartz in his thesis on the subject. Should a radical cure be attempted by extirpation of the larynx, or should the palliative operation of tracheotomy be adopted? M. Tillaux said that he thought the history of his case showed that tracheotomy was useful in some cases, and for his part he was not disinclined to prefer it, as a rule, to extirpation.

Professor Verneuil considered that the superiority of tracheotomy over extirpation was incontestable. With the latter operation, when the patient does not die from the immediate consequences, he speedily succumbs to a relapse. In one case of epithelioma, tracheotomized by M. Verneuil a year ago, the tumor was so considerable that it was difficult to understand how it was possible to breathe at all. After tracheotomy, or rather Krishaber's operation of laryngo-crico-tracheotomy, the patient resumed his ordinary business, and is even able to speak pretty distinctly when the opening of the canula is occluded.

M. Richet mentioned a similar case.

M. Labbé did not agree with his colleagues. He said that he had, like them, performed tracheotomy for the relief of laryngeal cancer, and should no doubt do so again. But he could not admit this to be the only operation possible, and that there are not cases in which we ought to practise extirpation of the larynx. As a rule, extirpation is done too late, upon subjects already tracheotomized, and for the relief of aggravated symptoms. It is reasonable to suppose that better results would be obtained if the operation were performed as soon as the cancerous nature of the growth is recognized, and before there is any secondary infection of the neighboring glands. The gravity of the operation is not so considerable as is generally supposed. In four cases of the kind M. Labbé had had three absolute operative successes, the patients living for different lengths of time without relapse. In the fourth case death was due to the accidental negligence of the nurse, who omitted to change the canula, as had been directed; in consequence the patient was nearly asphyxiated by the accumulated secretions, and died a fortnight later of septic pneumonia.

The thesis of M. Schwartz (*Thèse d'Agrégation*, 1886), the most impartial monograph upon extirpation of the larynx in the French language, necessarily serves as a

groundwork for all general reviews of this question, and the current number of the *Bulletin Médical* contains a good *résumé* of it by M. Maurice Hache, who brings the statistics of M. Schwartz up to date by the addition of recent cases. In 105 observations quoted of total extirpation of the larynx, death took place fifteen times within the first week from hemorrhage, collapse, embolism or septicæmia, or other causes; twenty times during the second week from pneumonia or bronchopneumonia. To these are added one case of death from pulmonary gangrene on the twenty-fifth day, five of late pneumonia, and two of exhaustion, making forty-three deaths in all from the operation itself, a mortality of forty per cent. Twenty-eight of the remaining relapsed, two before the expiration of three months, six others before six months, eight before a year, two between the first and second years, and two before two years and a half. Thirty-four patients are recorded as cured—fifteen after six months' observation, eight more after less than a year. One was published fifteen months; one, sixteen months; two, from two to three years; three, from three to four years; two, five years; and one, ten years after operation. Counting those as cured who have lived two years, there have been eight certain successes in 105 cases. Of twenty-seven published cases of partial extirpation, in one there had been no relapse after eighteen months, in another the cure was definite after seven years. Seven other operations had been successful, but the time elapsed at the date of publication was under a year and a half. From a functional point of view the condition of those who have been operated on is less unsatisfactory than might be supposed. Deglutition is restored sometimes within a week, nearly always after a couple of months; and by means of Gussenbauer's artificial larynx there is a very fair restoration of the voice.

Iodoform in Variola.—Colleville has had excellent results in preventing severe scarring and lessening pain in variola by the local use of

Iodoform	1 part.
Vaseline	20 parts.

Although used freely in cases of confluent variola, no ill effects were observed.—*Revue de Thérapeutique*, November 15, 1887.

The Technique of Antipyrine Hypodermatically.—Hirsch, of Hanover, has used a fifty per cent. solution of antipyrine by hypodermatic injection for pain with excellent results. He finds that the needle frequently clogs with crystals of antipyrine. He finds that five per cent. carbolic acid solution is the best dissolvent for these crystals. The carbolic solution should be drawn through the needle until it remains clear in the barrel, when no antipyrine is present. If antipyrine is present, a cloudiness will result from the union of carbolic acid and antipyrine.—*Berliner klinische Wochenschrift*, November 14, 1887.

Chlorosis and Retention of Feces among Girls.—Sir Andrew Clark, in the *Lancet* of November 19, 1887, contends that the anæmia or chlorosis of girls arising in nervous constitutions with imperfectly developed sexual organs is caused for the most part, and in the first instance, by feculent retention and its consequences, and that the right as well as speedily successful treatment lies in the enforcement of a sound hygiene, the administration of ferruginous cathartics, and in the provision after cure for a daily and, as far as possible, a natural relief to the bowels.

His treatment of an ordinary case is as follows: On first waking in the morning, sip a quarter of a pint of cold water. On rising, take a tepid sponge bath; dry quickly, and follow with a brisk towelling. Clothe warmly and loosely; see that there is no constriction of the body or of the limbs. Have four simple but liberal meals daily, arranged after this fashion: Breakfast, eight to nine—whole-meal bread and butter, with one or two eggs, or some broiled fresh fish, or the wing of a cold chicken or pheasant, and toward the close of the meal half a pint of equal parts of milk and tea, not infused longer than five minutes. Lunch or dinner, one to two—fresh, tenderly dressed meat, bread, potato, well-boiled green vegetable, and any sort of simple farinaceous pudding or of cooked fruit, preferably apple; drink one glass of Burgundy alone or in half a tumblerful of water. Tea from four to five—whole-meal bread and butter, with a cup of equal parts of tea and milk. Dinner or supper, from seven to eight—this should resemble the mid-day meal, but should be less in quantity. Nothing is to be taken after this meal, nothing between meals, and nothing but what is here set down. Walk at least half an hour twice daily, and as much more as strength and convenience will permit. Retire to bed about ten, and repeat the sponging and towelling. See that your bedroom is cool and well ventilated. Lead a simple, regular, active, occupied, purposive life; and do not notice or distrust yourself.

With such instructions modified according to individual peculiarities, I prescribe an old-fashioned ferruginous cathartic, to be taken twice a day, about eleven and six. Usually it is an acid mixture, designed somewhat as follows:

R.—Ferri sulphatis	gr. xxiv.
Magnes. sulph.	℥vj.
Acid. sulph. arom. . . .	℥j.
Tinct. zingiberis	℥ij.
Infus. gent. co. vel quassiæ .	℥viij.

Fiat mist.

Sig. One-sixth part twice daily, about eleven and six.

Occasionally this acid mixture produces sickness, dries the skin, and is otherwise ill borne. In such cases I prescribe an alkaline cathartic mixture.

R.—Ferri. sulphat.	gr. xxiv.
Sodii bicarbonat.	℥ij.
Sodii sulphat.	℥vj.
Tinct. zingiberis	℥ij.
Spts. chlorofor.	℥j.
Inf. quassiæ	℥viij.

Fiat. mist.

Sig. One-sixth part twice daily, about eleven and six.

Sometimes neither mixture agrees, and then I prescribe sulphate of iron in pills with meals, and a saline aperient on first waking in the morning.

Upon the plan of treatment here described nine out of ten cases of this anæmia of girls recover their health in from one to three months; and if, when health is

quite restored, one prescribes once or twice a week an aloes, myrrh, and iron pill, in doses just sufficient to bring about a moderate natural action of the bowels, the recovery will prove in all probability permanent. But upon this statement some of my auditors will remark, "It is the iron which cures; it is not the aperient." That iron has much to do with the cure of the malady I admit, but I doubt if it plays the chief part; and I know that in numerous cases the use of iron, arsenic, and manganese unaccompanied by aperients has failed to cure. Furthermore, I have seen many patients who, having been treated in this manner unsuccessfully for months, speedily recovered their health under the influence of a ferruginous cathartic mixture and a regulated diet. And so clear and strong is the teaching of my experience upon the point under consideration that if in the treatment of this malady I were perforce limited to the employment of one sort of drug, the drug which I should choose for use would be an aperient.

ICHTHYOL IN RHEUMATISM.—DOUBELIR reports that in the military hospitals of Moscow ichthyol has been given in 8 cases of articular rheumatism, 6 of which were acute and 2 were chronic. The result was diminished pain, but continued swelling. The remedy may be given in pills or capsules containing one and a half to three grains each. Of these from six to twelve of the first and from three to six of the second may be given in twenty-four hours.—*L'Union Médicale*, November 5, 1887.

TO PREPARE SATURATED SOLUTIONS OF BORIC ACID.—CABANÈS has found the following formula useful in securing the solution of boric acid:

Acid. boric.	12 parts.
Magnesiæ calcin.	1 "
Aquæ destillat.	75 "

—*Journal de Médecine*, November 13, 1887.

A POST-MORTEM EXAMINATION OF A MORPHO-MANIAC.—At a recent meeting of the Paris Academy of Medicine, BALL reported an interesting case of morphomania, with fatal termination, from failure of respiration.

Post-mortem examination revealed the heart muscle pale, fatty; the aorta was narrowed at its origin. The nervous centres, kidneys, and liver were normal. Chemical examination demonstrated the presence of morphia in the nervous centres, the kidneys, spleen, and in largest quantities in the liver.—*Revue de Thérapeutique*, November 1, 1887.

ANTIPYRIN HYPODERMATICALLY, FOR PAIN.—FRÄNKEL, of Breslau, has used a fifty per cent. solution of antipyrin in distilled water, of which he commonly gave half an ordinary hypodermatic syringeful (three and three-quarters grains, of antipyrin). The dosage was increased three or four times this quantity with good results. A cutaneous surface, about two inches in diameter, was usually anæsthetized by the injection. He found an injection of three and three-quarters grains of antipyrin to equal about one-third of a grain of morphia, and in a comprehensive series of painful affections he obtained results which led him to consider antipyrin a positive anodyne. Two cases of severe pain from acute inflammation of the middle ear were benefited at once, and especially illustrated the value of the drug.—*Wiener medizinische Presse*, October 30, 1887.

AN APPARATUS FOR TESTING THE EYESIGHT OF CHILDREN.—DR. COHN, oculist at Breslau, has invented a new apparatus for testing the eyesight of children. This is a matter which is scarcely attended to at all in this country. Periodical tests have shown that there is much more small mischief in the eyes of young students than is generally supposed, which can easily be stopped if the necessary precautions are taken in time. Dr. Cohn's invention consists of a white board twenty-five centimetres square, to which are fastened six rows of hooks, shaped thus ⊐, one centimetre square. He who possesses a normal eyesight will be able to tell, at a distance of six metres, in ordinary daylight, in which direction—upward, downward, to the right, or to the left—the hooks, which are painted of different colors, are turned. Pupils who cannot do this injure their eyes by constantly looking at the blackboard. The same board may be used to determine whether the ordinary daylight is sufficient for the rooms. As soon as the teacher cannot distinguish the direction of the hooks at a distance of six metres without straining his eyes, the gas ought to be lighted at once.

THE TREATMENT OF CHRONIC LEG ULCERS WITHOUT REST.—BAUM, in the *Deutsche medicinische Wochenschrift*, No. 27, 1887, affirms that by adopting the following mode of treatment, ulcers of the leg may be cured while the patient follows his usual employment. First, the whole leg is most carefully washed with soap, shaved, and brushed with sulphuric ether. Then the ulcer is carefully disinfected with a three per cent. carbolic solution, applied by cloths dipped in it, which are kept on for half a day. The leg is then carefully dried and strapped, the strips crossing in front and overlapping at the edges. The plaster must be spread thickly on the linen; breadth of each strip, four to five centimetres (1½ to 2 inches). Above this strapping eight layers of carbolic gauze are laid, and fastened with a calico bandage.

Every second day the bandage is taken off, and the carbolic gauze, especially over the situation of the ulcer, is thoroughly sprayed with a twenty per cent. carbolic spirit, then a fresh bandage is applied.

This treatment is continued for four weeks. On removing the whole dressing, the ulcer is found, in most cases, completely healed up. If a small spot should still be open, a small similar dressing is put on for a fortnight.

SUPRAPUBIC PROSTATECTOMY.—At a recent meeting of the Clinical Society of London, MR. MCGILL read a paper on suprapubic prostatectomy, and related three cases where the operation had been successfully performed. The operation consists in opening the bladder above the pubes in the usual manner, and removing with scissors and forceps that portion of an enlarged prostate which prevents the outflow of urine. Case 1 had suffered from urinary symptoms for seven years,

and had not been able to pass urine without a catheter for seven months. Six calculi, weighing 174 grains, and a portion of the prostate as large as a walnut, were removed by suprapubic incision. The patient made a speedy recovery, and did not require to use a catheter. Case 2: Symptoms of prostatic enlargement for two years, acute symptoms for a fortnight, fetid urine, and frequent micturition. The patient was treated for three weeks by ordinary methods without benefit. The middle lobe of the prostate, the size of a bean, was removed with immediate benefit. He left the hospital on the twenty-seventh day with the wound healed, and passing urine without difficulty. Case 3: Prostatic symptoms for six years. Acute symptoms of greater or less severity for three years. On admission into hospital, the patient was found to be extremely ill. He vomited all his food, had constant diarrhœa, and passed putrid urine, which deposited one-third of its bulk of pus. On opening the bladder, the ureters were felt to be much dilated. The projecting portion—the enlarged prostate—was removed. He made a quick and satisfactory recovery, and was able to micturate without difficulty. The benefits derived from the operation are of two kinds: first, acute symptoms are relieved by the drainage of the bladder; and, second, the cause of these symptoms is removed by excision of a portion of the enlarged prostate. As yet the operation has only been practised in acute and urgent cases; it is not improbable that in the future it may be resorted to before any acute symptoms intervene.

Mr. Christopher Heath spoke of the great advantage of the suprapubic drainage in cases of long-standing prostatic enlargement with its consequences. He considered Mr. McGill's action as a new departure. Some years ago Sir William Ferguson tried the removal of enlargements of the prostate by the perineal incision as in lithotomy, but the hopes raised by this method did not appear to have been fulfilled. Mr. McGill's mode of treatment may be said to have opened up a great field for enterprising surgery.—*Lancet*, November 19, 1887.

The Treatment of Tuberculosis of the Larynx by Curetting and Lactic Acid.—Heryng reports, in *L'Abeille Médicale* of November 7, 1887, 36 cases of tubercular ulcers of the larynx, treated by this method, with 27 cures. The bacilli were found in the matter removed.

Carcinomatous Infection.—At a recent meeting of the Berlin Medical Society, Von Bergmann expressed his belief in the possibility of particles of carcinomatous matter causing local infection when transferred to favorable portions of the body. He instanced examples of carcinoma of the mouth and tongue which had been followed by carcinoma of the stomach and intestine. Also the direct transference of the contagion of carcinoma from the tongue to the adjacent tissue of the mouth has been noted.

Hahn reported an experiment he had made, in a patient suffering from disseminated carcinoma, in whom he had transplanted portions of three cancerous nodules. Growth and development of typical carcinoma followed.

Virchow thought that the transplanted cancer may have grown with the hypertrophied and irritated integument, without a real infection from carcinoma having occurred.—*Deutsche medicinische Wochenschrift*, Nov. 10, 1887.

Iodoform, Deodorized.—Cantrelle, pharmacist at Paris, has found, of all the ways devised for hiding the odor of iodoform the following combination is the best:

Iodoform	gr. 15.
Menthol	gr. ¾.
Essence of lavender (of best quality)	gtt. 1.

In addition, the hands may be washed in water containing a little lavender brandy or essence. Cocaine may be added, when instant anæsthesia is required, as follows:

Iodoform	gr. 15.
Cocaine	gr. ¾.

—*Bulletin Général de Thérapeutique*, Nov. 15, 1887.

The Cardiac Apex Beat in Children.—Gundobin, of Moscow, has examined 300 children, to locate the apex beat. In 14 it was felt in the fourth intercostal space; in 60 between the fourth and fifth; in 220 in the fifth intercostal space, and in 6 cases in the sixth intercostal space. In 190 children it was in the mammary line; in 80 cases it was external to the line, and in 30 cases it was internal. Gundobin has found that the location of the apex beat with reference to the mammary line, is dependent upon the relation between the length, breadth, and depth of the thorax. In newborn children these measurements are of equal length, and in children two weeks old are eight centimetres (3.12 inches) in extent. As children grow the antero-posterior diameter increases less than the others. So long as the other diameters remain of equal length, the apex beat is always external to the mammary line. When the difference between the two diameters is one inch, the apex beat is on the mammary line; when the difference is one and three-quarters inches to two inches the apex beat is inside the mammary line. In children one year old the apex beat was external to the mammary line. In those two years old in 90 per cent. it was external; in children three years old it was external in 28.5 per cent.; between four and five years in 5 and 5½ per cent. In children from five to eight years old the apex beat was in the mammary line in 100 per cent. As age increased the apex beat was within the mammary line until at thirteen years 85 per cent. showed the heart's beat internal to the nipple line. In children of all ages the apex was external in 17.6 per cent., upon the line in 67.4 per cent., and internal in 15 per cent. Regarding the location of the nipple, in only 65 out of 100 children is it constant, when chest measurements are the same; the difference being from one-third to one-half an inch. The distance of the apex beat from the median line increases as the child grows older.—*Centralblatt für Kinderheilkunde*, No. 18, 1887.

The Treatment of Spinal Disease by Continuous Extension in the Horizontal Posture.—Fleming, in the *Glasgow Medical Journal* for November, 1887, describes his method of treatment as follows:

The arrangement I now adopt consists of a strong

elastic cord six inches to a foot in length, one end of which is made fast to the top of the bed, and the other to the centre of a piece of wood rather longer than the greatest diameter of the head. The head stall—made after the pattern of the one used for suspension in Sayre's method, but of chamois or other soft leather, and rubber-tubing in place of side straps—is connected to the ends of this wooden yoke. A broad towel is tightly pinned or sewn round the pelvis, and to this, in the middle line behind, is firmly attached the end of a piece of strong calico bandage. The other end of this is tied, at about the level of the feet, to the cord passing over the common extension pulley at the end of the bed, and a weight, proportioned to the body weight of the patient, put on. The bed is covered with a macintosh sheet freely dusted with powdered boric acid, and the arrangement is complete. It will be seen that, while the whole spinal column is thus acted upon by the extensile force, the arms and legs are quite free, and the patient can turn round and lie on the back, face, or either side at will, without for a moment relaxing the extension. The object of the smooth vulcanized rubber sheet is to reduce the great friction between the body and the rough surface of the sheet, which it was found entailed a considerable increase of weight.

In the majority of cases in which pain has previously existed it is almost immediately relieved. The patient experiences a sense of comfort; sleep and general condition improve. In some cases—indeed, where attainable, probably in nearly all—the use of massage and electrical stimulation of muscles is advisable, and can be employed without even momentary interference with the extension. In many cases it is advisable, after the cessation of all symptoms under this treatment, to make the patient for some time wear a poro-plastic or other jacket, or, in cases of disease of the upper part of the spine, my pneumatic collar or Hillard's pelvic jury-mast.

GUAIACAL.—This substance is the active principle of creasote, and is used by SAHLI in tuberculosis, as follows:

R.—Guaiacali	. . . .	gr. 25 to gr. 30.
Aquæ	. . . .	℥ 45.
Spirit. vini	. . . .	℥ 5.—M.

To be put in darkened bottles.

Sig.—Teaspoonful to dessertspoonful two or three times daily.—*Correspondenzblatt f. Schweizer Aerzte*, Nov. 20, 1887.

AN ARTIFICIAL ATMOSPHERE FOR PHTHISIS.—Doubtless a perfect atmosphere for cases of chest disease, and especially phthisis, must remain for a long period a utopian idea. The subject of an artificial atmosphere was raised recently at the Biological Society of Paris by M. d'Arsonval, who described several apparatus constructed by him for permitting patients, and especially phthisical ones, to respire an artificial atmosphere, and he showed a means by which the inspired air should be uncontaminated by the fluid in the expired air. Dr. Brown-Séquard, in the discussion thereon, said it would be very important to settle this point in the hygienic treatment of *poitrinaires* and others. He has tried to employ an atmosphere containing a rather larger percentage of oxygen than the normal of ordinary air; but he found that when the oxygen was in too great a quantity, irritation resulted, causing considerable distress, even when the carbonic acid eliminated remained normal. If, nevertheless, a mixture in determined proportions of carbonic acid and oxygen be made in an artificial atmosphere, these phenomena of intolerance are no longer produced. It is known that carbonic acid, besides its anæsthetic property, exercises a cicatrizing effect on wounds. It is possible to comprehend how, in cases of tuberculosis, a diminution of reflex sensibility, and consequently a lessening of cough, may be afforded, whilst at the same time the pulmonary lesions may be favorably influenced, by carbonic acid.—*Lancet*, November 19, 1887.

TUBERCULOUS ERUPTIONS.—At a recent meeting of the Berlin Medical Society, BAGINSKY reported two cases of general tuberculosis in which, in addition to the ordinary lesions of pulmonary tubercle, well-marked local tuberculous eruptions appeared on the velum palati, on the gums, and on the tonsils. The secretion when examined revealed the bacilli of tubercle in abundance.—*Deutsche medicinische Wochenschrift*, Nov. 10, 1887.

THE TREATMENT OF SCIATICA BY MASSAGE.—In the *Practitioner* for November, 1887, DR. ECCLES reports good results in cases of the most severe type, being characterized by the acuteness of the local suffering and the severity of the constitutional disturbance attending it. Of the six cases referred to as of a doubtful nature it is only necessary to note that they occurred in subjects of a distinctly anæmic type, the sciatic affection apparently being a concomitant of the general ill-nourished condition rather than its primary cause.

In these cases general corporeal massage was systematically performed, with frequent meals at regular intervals, consisting chiefly of milk, butcher's meat, and farinaceous puddings. Rest and the avoidance of all pressure upon the nerve trunk was strictly maintained for periods varying from four to ten weeks, with the result that not only was the sciatic pain removed, but the patients all improved in respect to their weight, appetite, and physical strength.

In the five cases in which neuralgia of the sciatic, supraorbital, facial, and temporal nerves was the most prominent feature, pain being complained of in one or other of these situations at intervals, sometimes in the sciatic nerve and the face on the same side coincidently, the treatment employed was in all respects identical with that previously described in referring to the neuritic cases; but the progress of the patients was not so steady as in the two foregoing classes, nor was the result so satisfactory in two cases, as the patients have since suffered severely from "neuralgia," which has not yielded to remedies except temporarily.

In one case, it is true, the effects of the treatment appear to have been so far permanent that for nearly twelve months the patient has enjoyed immunity from pain; but this must be attributed, perhaps, as much to the improved circumstances of her life as to the fact that while under treatment she decidedly gained weight and the power to sleep; which she had lost for some months previous to coming under treatment.

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THE CROWN PRINCE'S CASE.

THE late reports concerning the distinguished sufferer at San Remo inform us that his condition has undergone considerable change for the better, so that there is no question at present of any operative interference; the acute symptoms pointing toward prospective tracheotomy having subsided, and his general health remaining excellent.

If the disease in the larynx of the Crown Prince of Prussia be carcinoma, the clinical course has been different from what is usual in that disease. It was only at the end of several months of close and continuous observation that a fresh projection was detected, half an inch below the original site of disease, which had meanwhile become cured. This projection, too, as far as the meagre descriptions indicate, may have been simply due to an abscess from perichondritis of the arytenoid cartilage at its base, the rupture of which could well be followed by the remarkable relief reported—relief which could hardly be expected to follow the supposed ulceration of soft carcinoma. The irregular outline of intralaryngeal abscess closely resembles the irregular outline of small, diffuse carcinoma.

In the *Berliner klinische Wochenschrift* of November 21, is published an official communication from Prof. Virchow to the Berliner medicinischen Gesellschaft, of which he is president, in which he repudiates all responsibility for the assertion that the Crown Prince's disease is not malignant, or for the plan of treatment adopted in consequence of his failure to find any evidence of malignancy in the fragments submitted to his inspection. It was to these fragments alone that his opinion was applicable, and not to the entire seat of the disease, of the conditions of which he had remained in ignorance. He refers to a statement in Morell Mackenzie's own monograph upon "Growths on the Larynx," 1871, that the microscope cannot be relied on for differential diagnosis, several cases having come under his notice where the histological features were decidedly those of cancer, while the clinical history was of a totally opposite character, and *vice versa*.

Virchow has been personally informed by Dr. Schmidt that the left vocal cord is at present in no way involved in the disease; the tissues submitted to operative procedure having healed without recurrence of morbid growth. Therefore, it cannot be taken for granted that the fragments examined were fragments of the carcinoma, even should the disease be cancer. In several collections of preparations of laryngeal carcinoma Virchow has observed none which showed entirely independent warty formations along with the cancer. In conclusion he declares that he has afforded no occasion for delay in the discovery of the other diseased portion of his Highness's larynx, which now appears to be under treatment; and he states that as months elapsed without hearing of any other diseased place than the one submitted to operation, the belief might well have been entertained that there was no other disease present, and that the prognosis was far more favorable than has unfortunately proven to be the case.

Reading between the lines we should say that, from the reports which have reached him, Virchow considers the case to be carcinomatous, notwithstanding the absence of corroborative histological evidence in the fragments of tissue which he has examined.

The present diagnosis of malignancy appears to be based on the physical appearance of the diseased portion of the larynx, without any support derived from examination of fragments, or any attempt to remove portions for that purpose. While the great probability is that the distinguished laryngologists, English and German, are correct in their opinion as to the cancerous nature of the disease, the clinical features cabled from time to time do not yet exclude a certain amount of doubt as to the accuracy of their diagnosis.

Carcinoma of the larynx usually presents as a supraglottic mass which extends downward; rarely as an infraglottic mass extending upward. When unilateral it begins usually in the vicinity of the ventricular band, extraventricularly or intraventricularly, or upon the vocal band. In the case under notice the disease in the vocal band has been cured without recurrence, and has been pronounced not to be malignant. Had it been in continuity with the present seat of the diseased portion of the larynx that fact would have been elicited gradually, and not by the sudden announcement of a swelling,

the evolution of which belongs rather to the clinical history of abscess of the larynx than to that of malignant growth. This circumstance and the site of the new manifestation lead us to hope that, after all, the alarm will prove to have been uncalled for, and that the Fatherland may still have a fair chance to be governed by the Prince it loves so well.

GALL-STONES AND PERNICIOUS ANÆMIA.

IN the *Berliner klinische Wochenschrift*, Nos. 44 and 45, GEORGI relates an interesting case of profound anæmia, which he tries to connect etiologically with the presence of a large number of calculi in the gall-bladder. The patient, a man aged thirty-six, had all the symptoms of advanced anæmia, with retention of subcutaneous fat and a light icteric hue of the skin. The blood changes were most marked; hemorrhage occurred from the bowels; there was a slight fever, and the case ran a rapidly fatal course. There were found, post mortem, fatty degeneration of the organs, a lymphoid state of the marrow, an increase in the amount of iron in the blood-making organs, and 175 calculi in the gall-bladder. The liver was fatty and bile-stained; the ducts not dilated. He had never suffered from gall-stone colic, but at times during the illness the stools were clay colored.

It is suggested that the small gall-stones in passing the common duct produced more or less obstruction and retention of bile, and an elaborate and lengthy account is given of the destructive influence of the bile acids upon the blood corpuscles, to which, in this instance, the anæmia is attributed. In support of this view the author has collected from the literature eight cases of pernicious anæmia associated with icterus. PROFESSOR EWALD, the editor of the journal, adds the report of a case of fatal anæmia with jaundice, but without any involvement of the liver or its ducts; and, as opposing Georgi's view, refers to the cases of chronic obstruction to the ducts, which may persist for months or years without inducing profound anæmia. The light lemon-colored tint of skin in pernicious anæmia is really—just as in malaria—a mild hæmatogenous jaundice, due to the dissolution of red corpuscles with diffusion and imbibition of the coloring matter. It is of various shades of intensity, and to this cause rather than any actual obstruction, the evidence for which is very doubtful, we should be inclined to attribute the light jaundice in the case under consideration.

THE FIRST FIFTY SANGER-CÆSAREAN OPERATIONS OF CONTINENTAL EUROPE.

WE promised several months ago to report the results of the first fifty cases, taken chronologically, so soon as we could feel satisfied that we were in the possession of them. It now appears that the list was completed in March, 1887, and that the success of the operation was fully up to our anticipations. To have saved forty women out of fifty, with forty-eight of their children, is certainly a great triumph in obstetric surgery, and must be a source of gratification to Dr. Sänger and those who have carried out his ideas of multiple seroso-serous suturing of the uterine wound.

Of the first twenty-five women operated upon, nineteen were saved, and of the second twenty-five, twenty-one. Engaged in the fifty operations were thirty-one distinct operators belonging to Germany, Austria, France, Italy, Russia, Poland, and Switzerland. Since the completion of the first fifty, there have been quite a number of operations, and the successful proportion is being still kept up. Prior to 1887, the Sänger cases of the United States were all fatal, because operated upon *in extremis;* but during this year there have been, in all, three of this class of operations, two of them in hospital, saving all of the women and two of their children, the third child being delivered moribund, after an active labor of four days. In this case a wide resection of the muscular coat, including a small fibroid, was made; and because of the existence of numerous other fibroids the ovaries were removed to establish the menopause. The woman was also rachitic, and had a badly deformed pelvis; still, the multiple suturing saved her.

We hope to see the Cæsarean operation in the United States differently conducted in the future, and women subjected to the knife in good season, so as to save both child and mother. The failures in the first five operations under the Sänger method in the United States we hope have taught a good lesson. The fact is established, that to be successful it should take precedence of the forceps, turning, and craniotomy, trials of which, only waste valuable time and add to the risk of the knife. No hospital Cæsarean case was ever saved in the United States, until it was done in case 10th, under the Sänger method, tried as soon as possible after the commencement of labor. Hospital operation 11 being also elective and promptly performed, was equally successful, although the woman was much broken in health from cancer of the cervix. The first fifty Porro-Cæsarean operations of Continental Europe, in chronological order, saved twenty-one women and forty-one children. We have not seen any report as yet of a Sänger operation having been performed in Great Britain. As but twenty-nine women have been saved in that country under one hundred and fifty old Cæsarean operations, we may be permitted to suggest that it might be well to give the plan a trial, in view of what has been accomplished under it in German hospitals, and very recently in New York and Baltimore under Professors William T. Lusk and John G. Jay, respectively.

We look for an entire change in our own country,

in the manner of conducting cases of very difficult labor. Take away the fear of the consequences of the Cæsarean operation, and midwives as well as accoucheurs will look to it, not as a last resort, but as a means of delivery, to be considered promptly, where the measure of pelvic obstruction renders the extraction of an unmutilated fœtus impossible, except under the knife, and through an abdominal incision. We believe that the Sänger operation promptly conducted is less dangerous to the woman than craniotomy, where the true conjugate of the pelvis is reduced to 2½ inches.

LAPAROTOMY IN RUPTURE OF THE BLADDER.

In the current number of The Medical News may be found a report of laparotomy for intraperitoneal rupture of the bladder, which, although it terminated fatally, illustrates what, in our opinion, is the proper mode of procedure in similar cases. Had the operation been practised soon after the occurrence of the accident, it is highly probable that the result would have been favorable. Be this as it may, laparotomy, with suture of the rent, in cases of intraperitoneal laceration, is the only treatment that holds forth the slightest prospect of success, and should be resorted to as soon as the diagnosis is made, although our text-books generally do not recommend such a course.

We quite agree with Dr. Fox that catgut is not a safe material for suturing the bladder; and we believe that interrupted catgut sutures are also unfitted for closing the edges of the abdominal incision. In similar cases we would advise that the peritoneum be approximated with the continued catgut suture, and the superficial wound with the continued silk suture.

THE INFLUENCE OF ALCOHOL ON THE ACTION OF PEPSIN.

This subject is so time-worn and threadbare that it seems scarcely worth while to bring it before our readers once more, and, but for an exhaustive article in *Les Nouveaux Remèdes* of October 24, 1887, we should not do so.

The experiments described, while interesting from a general point of view, are absolutely worthless so far as any practical value is concerned, for experiments on digestion in the test-tube can never be relied upon as a basis from which to draw conclusions as to the influence of *pure alcohol* in the stomach. We have already pointed out that while, chemically, alcohol retards the action of pepsin, physiologically it so irritates and stimulates the gastric mucous membrane as to cause a large flow of gastric juice, which is capable of overcoming any influence it might exert for the moment on the small amount of pepsin present in the stomach.

The results reached in the article quoted are in direct agreement with all other like series of experiments, and could not well be otherwise, if correctly performed, so many uniform results having been reached already by other observers. As we have heard a well-known therapeutist remark, "They told me that alcohol retards digestion in the test-tube, but I have always objected to having my stomach compared to a piece of glassware."

Dr. Charles T. Parkes, formerly Professor of Anatomy in Rush Medical College, Chicago, succeeds the late Professor Gunn in the chair of surgery in the same institution.

The Philadelphia Board of Health has fined a physician $100 for not reporting to the Board two cases of leprosy under his charge, in accordance with the law requiring the reporting of contagious diseases to the Board.

A Spanish translation, by Professor Ramor de la Sota y Lastra, of Dr. J. Solis Cohen's monograph on "Croup in its Relations to Tracheotomy," has just been published at Seville.

In the *British Medical Journal* of November 5, is a timely editorial on woollen winter underclothing. The *Journal* regrets that underwear made upon the Continent, and especially in Germany, has, "by dint of diligent puffing," obtained a position of apparent superiority that is not deserved. It calls attention, among others, to the all-wool clothing of the Donegal Industrial Fund, made in Ireland, and asserts its superiority on hygienic grounds and on artistic merit and durability over the imported hosiery, and urges upon physicians to help to dissipate the absurd claims made for some Continental manufactures of woollen wear that are now finding their way to these shores.

Dr. Thomas L. Janeway, of New Brunswick, New Jersey, died November 28, at Eureka Springs, Arkansas, aged forty-three years. He graduated from Rutgers College in 1863, and from the College of Physicians and Surgeons, New York, in 1867. After graduating he took up his residence for some time in Germany, continuing his medical studies, and part of the time acted as surgeon in the German army. In 1877 he returned to New Brunswick and entered upon medical practice. Latterly his health has been infirm from Bright's disease, and at the time of his decease he was on his way, accompanied by members of his family, to California to spend the winter for the benefit of his health. The deceased came of a family of great worth and intelligence, and eminent in theology as well as in medicine.

ACCORDING to a press cablegram Dr. Sommerbrodt, the eminent laryngologist, of the Breslau University, lectured last Tuesday on the case of the Crown Prince. He stated that he was inclined to the conclusion that it is a case of simple perichondritis, with an abscess formation, and not of a cancerous nature. He thought that some difficulty is likely to be presented in the extrusion of several pieces of dead cartilage. He considered that the prospects of the Prince's recovery are hopeful.

REVIEWS.

IMPOTENCE, STERILITY, AND ALLIED DISORDERS OF THE MALE SEXUAL ORGANS. By SAMUEL W. GROSS, A.M., M.D., LL. D., Author of a Practical Treatise on Tumors of the Mammary Gland. Third Edition. 8vo. pp. 172. Philadelphia: Lea Brothers & Co., 1887.

As Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College, the utterances of Dr. Gross are entitled to most respectful attention, and that the value of this practical treatise has been appreciated by the profession, is proved by the speedy call for a new edition of it. With the decision borne of experience, Professor Gross lays down rules of practice which are reliable, and based not only upon experimental knowledge, but upon the observation and judgment of others. Working in a field which has been but casually explored by others, the author of this practical treatise has produced a compend containing pretty much all that the present state of our knowledge enables us to state confidently. The expression of the opinion that the fault in unfruitful marriages lies with the husband in one case out of every six, will be a surprise to many, and the application of the rule should save many women from serious and needless operations. What effect it may have in promoting the happiness of such unions, where the condition is irremediable, must remain a problem for future solution. The book has the commendation of the profession, and needs none from us.

VISITING LISTS.

THE MEDICAL NEWS VISITING LIST, 1888. Philadelphia: Lea Brothers & Co.

THE PHYSICIAN'S VISITING LIST FOR 1888. Philadelphia: P. Blakiston, Son & Co.

ALTHOUGH the first of these Lists has been before the profession but a few years, it has won favor which demonstrates its adaptation to the wants of the practitioner. In its present revised edition it contains the data indispensable in diagnosis and treatment, and as a specimen of the bookmaker's art is handsome and durable.

The alterations embodied in the List for 1888 bring it fully up to our practical knowledge in therapeutics, the new remedies introduced being those which have proved of value. The illustrations, tables of the metric system and various clinical memoranda furnish the physician extensive information in the most convenient form. The arrangement of the different editions cannot fail to satisfy the most varied practice, and the Visiting List will prove itself a welcome and useful companion.

The well-known Blakiston Visiting List is somewhat different in plan and finish from the previous. The articles likely to prove of most value are the review of new drugs, which is fully up to date, and the memoranda for the examination of urine. The selection of new material has been judicious, and the physician will find the requisite data for ordinary medical practice at his disposal in this convenient-sized pocket volume.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 1, 1887.

THE PRESIDENT, A. JACOBI, M.D., IN THE CHAIR.

DR. J. W. STICKLER, of Orange, New Jersey, read a paper on

FOOT AND MOUTH DISEASE AS IT AFFECTS MAN AND ANIMALS, AND ITS RELATIONS TO HUMAN SCARLATINA AS A PROPHYLACTIC.

He said that he had two reasons in presenting the present paper; first, because it gives the result of investigations which he had been making during the past four years; and, second, because it points out the way in which such results may be turned to practical account. It has long ago been shown beyond question that foot and mouth disease may be communicated to the human subject in either of two ways: (1) through the agency of milk from affected animals, and (2) by the accidental introduction of virus into open wounds.

Having referred to the general symptoms of the disease as it occurrs in animals, he mentioned those which it presents in man; stating that it is characterized by glandular enlargements, vesicles in the mouth and upon the hands and feet, and, in some cases, by a scarlatinal eruption in different parts of the body. This was the case with Hartwig and others who purposely contracted this disease by drinking milk from infected animals. Instances of this kind varied somewhat from those in which the affection was caused by virus introduced into the system in other ways.

Dr. Stickler then gave some account of the sudden and severe epidemic of sore throat which occurred in Dover, England, in 1884, and attacked the inmates of the best houses in the place, and said that it was conclusively proved that the outbreak originated from milk obtained from cows suffering from foot and mouth disease. In the majority of the cases the two principal symptoms were inflammatory sore throat and enlarged cervical glands; while in many instances vesicles were also noted. The sequelæ in general resembled those of scarlet fever. An investigation of 182 of the cases made at the end of two years after the outbreak showed the following points:

(1) None of the patients had since had scarlet fever.

(2) Members of families who had previously had scarlatina, as a rule, escaped the epidemic, while those who had not had scarlatina were generally attacked.

(3) Sixteen of the patients had already had scarlatina.

(4) Four of these were very mild cases.

(5) Two of these had had scarlatina when very young.

(6) In ten cases it was doubtful whether the patients had had scarlatina or not.

He then related the histories of those cases in which he inoculated children with virus from milch cows and subsequently exposed them to the contagion of scarlet fever. The first was a child, eight years of age, who, after it had entirely recovered from the effects of the inoculation, was taken to the room of a scarlet fever patient and made to inhale the breath of the latter and place its head upon the pillow used by him. Yet, notwithstanding this exposure, the child did not develop scarlet fever. The second was a child, four years of age, in whom the inoculation produced much greater constitutional disturbance than in the previous case. The throat and mouth became sore, the temperature went up to 103°, and there was a scarlatinal eruption followed by desquamation of the cuticle. This child was afterward directly exposed to the contagion of scarlet fever in the same way, and did not contract the disease. The third child inoculated was ten years old, and though during the three years since the inoculation was made abundant opportunities for infection have been met with, up to the present time he has escaped scarlet fever. Dr. Stickler said he was well aware, however, that at this stage of the investigations now being made no positive conclusions could be arrived at.

While foot and mouth disease is essentially the same in man as in animals, there are some differences, and he now proceeded to describe in detail the symptoms met with in the latter. There are four marked stages in its history in animals; viz., (1) fever, (2) eruption, (3) desiccation, and (4) desquamation. In milch cows the flow of milk becomes merely suppressed, while the milk is of a yellow color and readily coagulates when boiled or exposed to slightly elevated temperature. There are vesicles in the mouth and throat, and unhealthy ulcers and erosions are sometimes left. Thomas had stated that scarlet fever is the only disease in which the mucous membrane will tear away, but he was probably not aware that this is also the case in foot and mouth disease. Repeated attacks of the affection in the same subject are supposed to be rare, but authorities differ very greatly in regard to this point.

Klein had claimed to have discovered the germ of foot and mouth disease, and said that it could not be distinguished from the germ of the disease caused by milk, which occurred at Hendon, and was unquestionably scarlet fever. In order to test the transmissibility of scarlet fever to the lower animals, Dr. Stickler inoculated two colts by injecting virus into the jugular veins and also giving them mucus from the mouths and throats of scarlet fever patients to swallow. In one colt the temperature went up to 103½° and in both there were sore throat, redness of the mucous membrane, cough, and difficulty of deglutition. In one of the cases there also resulted desquamation. Having repeated these experiments in a considerable number of other animals, he was convinced that it is possible to inoculate the lower animals with scarlatina.

In inoculating human beings with virus from animals the lesion was found to be a mild one, and he believed that this virus could be used in such a way as to prevent scarlet fever. Four years ago he had inoculated twelve cases with good results. Out of thirteen other children, who were already exposed to the infection of scarlet fever, five escaped the disease entirely, while eight were attacked with it. None of the cases, however, were severe, and the question arose whether the severity of the disease was not mitigated by the inoculation. During the last year he had inoculated two children. In conclusion, he said that while it was by no means proven that scarlatina could be prevented by such inoculations, the results thus far obtained were very suggestive, and he hoped to pursue the investigations in which he was engaged still further.

Dr. Andrew H. Smith said that the author of the paper had certainly made out a very excellent case for the efficacy of inoculations against scarlet fever. He would like to inquire whether it was an easy matter to procure virus, so that the supply could be kept up in case the method came into general requisition.

Dr. Stickler replied that the foot and mouth disease is extremely common in Europe. In this country, however, it is very rare. There had been an outbreak of it in Maine about two years ago, and he had also been told that it had occurred in the West. The disease which affected the cows at Hendon was not so frequent. This he believed to have been genuine scarlatina, and he had no doubt that milch cows could be readily inoculated with the virus of scarlatina derived from the human subject.

Dr. Andrew H. Smith said that he found that if the virus, derived from cows inoculated in the manner suggested by Dr. Stickler, were employed, the children thus treated would be subject to all the dangers of the unmodified disease, as was the case in smallpox when the latter was transmitted from person to person by inoculation.

Dr. Finley said that he had seen a great deal of foot and mouth disease in Scotland. It is regarded as an epizootic aphtha, and one attack of it confers no immunity whatever from subsequent attacks, as he had known cattle to suffer again from the disease within six months after having had it, and it is exceedingly common for the same animals to have it more than once. In the case of sheep, however, it really seemed that one attack was protection against subsequent ones, as he did not remember ever to have seen a recurrence of the disease in an animal of the bovine tribe.

Professor Law, of Cornell University, said, that as regards the prophylactic form of foot and mouth disease in relation to scarlet fever in the human subject, he had to confess that he was still a sceptic. In Great Britain there are frequent outbreaks of the disease, which affect not only the cattle, but the people coming in contact with the latter, and he thought that if foot and mouth disease prevented scarlatina, scarlatina ought to be a much less common disease there than in this country, where epizootic aphtha is almost unknown. Such is not the case, however, as the statistics show that during the last five years ninety thousand deaths were due to scarlatina in Great Britain. Then, again, an attack of foot and mouth disease in cattle confers a very limited, if any, immunity from subsequent attacks, and, like Dr. Finley, he had known it to recur within six months in the same animal. Recurrence of the disease is very common in his experience, and, therefore, he would hardly suppose that inoculation with it would confer immunity from scarlatina for any length

of time, if at all. While it is a very contagious disease when there is direct exposure to it, he believed that it differs from scarlatina as to its contagiousness under other circumstances. His own personal experience also tended to throw doubt upon Dr. Stickler's hypothesis. While he had been over and over again exposed to any amount of morbid products from cases of foot and mouth disease, he had never suffered from the affection; but the very first time that he was exposed to the infection of scarlatina he contracted that disease. His system had been susceptible to the one, but not to the other.

These points, therefore, seemed to militate against the protectiveness of one disease against the other. Still, it did not follow that the immunity conferred by foot and mouth disease might not be more extended in a race less susceptible to its influence than the bovine. As regards foot and mouth disease, he would strongly suggest that the investigation into its prophylactic power should be carried on on the other side of the Atlantic, as it would be a very serious matter if the disease should be introduced among American cattle; and he had no doubt that there would be a general outcry among the cattlemen if it were known that experiments were being made with the virus of the disease in this country.

Again, if we employ the virus of scarlatina for making inoculations, do we not more widely disseminate the disease? While he had great respect for the ability and achievements of Pasteur, he could not but believe that he had increased the spread of anthrax by scattering broadcast his modified anthrax virus, for he was convinced that a matured virus could, under certain conditions, be rendered potent and dangerous. In the same way he feared that rabies would only be increased by the dissemination of his attenuated virus of that disease, and he said that he believed it to be a fact that there had been more rabies among dogs in England since the discovery of Pasteur than ever before. These considerations, in his opinion, condemned the method, and he thought that the living germ of the same disease should never be used for inoculations, on account of the danger of spreading the affection involved.

DR. MCLEAN said that he did not doubt that the Hendon epidemic was one of true scarlatina, but it was not proved that the scarlatina came from the cows. He denied that there is such a disease as bovine scarlatina, except, possibly, in cases where the disease is transmitted directly from the human subject by inoculation. In the Hendon outbreak the disease may have been conveyed by the milk, but if this was the case, it did not come originally from the cows. The milk was no doubt contaminated from other sources, as has frequently been noticed in epidemics of typhoid fever and other affections, and it is well known how excellent a medium milk is for the conveyance of infectious diseases. Again, he did not think it susceptible of proof that foot and mouth disease is prophylactic of scarlatina, as he believed this to be a specific disease, the germ of which is capable of giving rise to epizootic aphtha, and to nothing else. So far as he was aware, there had been but two outbreaks of foot and mouth disease in this country—one in Maine and the other in the vicinity of New York City, extending up the Hudson as far as Poughkeepsie.

DR. JOHN C. PETERS said that a great many of the most distinguished veterinary authorities believed in the occurrence of scarlatina in horses and cattle.

DR. J. LEWIS SMITH said that since the time of Jenner the hope has been awakened that some of the other infectious diseases, and especially scarlet fever, might be prevented, as smallpox has been, by the substitution of a milder and modified disease derived from the lower animals. As regards scarlet fever, two propositions of great interest and importance have arisen. First, is there a disease in the bovine race, which is true scarlet fever, or which communicates genuine scarlet fever to man? and secondly, if there be such a disease, does it communicate a modified and mild form of scarlet fever to man? Many instances have been recorded in the last five or six years, in which epidemics of scarlet fever have arisen from the use of milk furnished by healthy cows, and infected with the scarlatinous germ after the milking, but in the St. Marylebone and Hendon epidemic, occurring two years ago, and described in the *British Medical Journal*, May 29, 1886, the outbreak of scarlet fever appeared to be clearly traced to diseased cows. Now the point he wished to call attention to is this: The sickness of the cows was mild, not appreciably impairing their appetite, nor diminishing their milk, but the disease, which the use of the infected milk produced, is described as an "intense outbreak of scarlet fever." Instead of a mild disease being propagated from the cow, for which we were looking and hoping, the reverse occurred. A mild form of the disease in the cow produced a severe one in man, so that, if we inoculate with the bovine scarlatinous virus, may we not produce severe and fatal epidemics?

PROFESSOR LAW said that, unfortunately, veterinarians had given the name scarlatina to an affection in which there was redness of the mouth, but which was non-contagious and totally distinct in character from true scarlet fever. The name had necessarily given rise to much confusion.

DR. STICKLER, in closing, said that if he produced only a slight and harmless attack of scarlatina by his inoculations, he could see no objection to the use of the scarlatinal virus; and when the terrible effects of the unmodified disease are considered, he thought it of extreme importance that a method of protection should be secured, if possible. As to the disease from which the Hendon cows suffered, it had, he thought, been positively demonstrated that it was nothing else than scarlatina, since it was precisely the same affection as was ordinarily produced in cows by the inoculation of scarlatinal virus from the human subject.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, November 23, 1887.

THE PRESIDENT, J. SOLIS COHEN, M.D., IN THE CHAIR.

DR. CHARLES B. PENROSE read a paper on

ELEVEN CONSECUTIVE CASES OF ABDOMINAL SECTION FOR DISEASE OF THE UTERINE APPENDAGES.

Abdominal section is at present such a common operation, and the diseases for which it is performed are so well recognized, that I shall not report these cases in detail; I shall simply tabulate them, consider them col-

lectively, and call attention to any special point of interest which may have occurred in the history of any case.

Case.	Age	Married or single	Disease.	Date of operation (1887).	Part removed	Complete closure of wound, or drainage.	Result
I.	30	Married.	Salpingitis and cirrhotic ovaries.	Feb. 16,	Both tubes and ovaries	No drainage.	Recovery.
II.	24	"	Pyosalpinx and cystic ovaries.	Mar. 14,	Right tube and ovary.	" "	"
III.	32	"	Salpingitis, multilocular cyst of ovary.	April 8,	Left tube and ovary.	" "	"
IV.	26	"	Double pyosalpinx and ovarian abscess	May 19,	Both tubes and ovaries.	Drainage.	"
V.	37	"	Double pyosalpinx, ovarian abscess, and hæmatocele.	May 25,	" " " "	"	"
VI.	30	"	Salpingitis and blood cyst of ovary.	June 20,	Left tube and ovary.	No drainage.	"
VII.	23	"	Salpingitis and abscess of ovary.	July 3,	" " " "	" "	"
VIII.	33	"	Salpingitis, blood cyst of ovary, uterine fibroid.	July 13,	Both tubes and ovaries.	Drainage.	"
IX.	22	"	Double pyosalpinx.	Aug. 9,	" " " "	"	"
X.	43	"	Dermoid cyst of ovary.	Aug. 17,	Left tube and ovary.	"	"
XI.	22	"	Double pyosalpinx.	Oct. 23,	Both tubes and right ovary.	"	"

These cases were operated upon during the year 1887. They all recovered, and are at present well and able to attend to their various duties. In five of the cases the appendages were removed on only one side. In one of these cases (Case II., pyosalpinx and cystic ovaries) he found it impossible to remove the left tube and ovary. They were firmly adherent in a knot on the side of the uterus, and the uterus was bound down in the hollow of the sacrum. In the other cases of unilateral removal he intentionally left the appendages upon one side. With the exception of the case of dermoid cyst, the women were young, and desirous of having children; and at the time of operation he could discover no sign of any pathological condition in either the tube or ovary. He is aware of the fact that in cases of tubal disease it is often unwise to perform a unilateral operation and to leave even an apparently healthy tube, as it may, in many cases, become subsequently diseased from an infecting focus in the uterus. Though sufficient length of time has not yet elapsed to come to any definite conclusion with regard to his cases, yet so far he has had no cause to regret having left the sound tubes; and in one case the patient has become pregnant since the operation.

A point of interest in connection with the first case (salpingitis and cirrhotic ovaries) is the length of time during which the patient was fed by the rectum. She began to vomit as she recovered from the influence of the ether; and she continued to vomit everything which was administered by the mouth for thirty-six days after the operation. There was no apparent cause for this excessive vomiting. The operation was simple, and was not followed by any obvious symptoms of peritonitis. The rectal injections, by means of which this woman was nourished for over a month, consisted of pancreatized milk, eggs, and whiskey. Two-thirds of a quart of milk, one egg, and three ounces of whiskey were administered in four or five doses during the twenty four hours. During this prolonged course of rectal feeding she lost many pounds in weight. No food at all was taken by the mouth; the very small quantities which were occasionally administered experimentally were always immediately rejected. When she finally became able to take food by the mouth it was necessary to give it in the form of twenty-drop doses of soup or beef-tea.

In investigating the histories of the cases of pyosalpinx, it was difficult to determine with any certainty the origin of the trouble. He could not in any case obtain a clear history of gonorrhœa; though in several he had reason to suspect it. In four of the five cases of pyosalpinx the patients attributed the origin of their disease to a miscarriage. In Case V. (double pyosalpinx, ovarian abscess, and hæmatocele) the active suffering dated from a violent fall upon the ice several years before the operation. The fall was followed by bleeding from the vagina, which lasted several days; and from that time until the time of operation she suffered with great pain in the lower part of the abdomen, which rendered it difficult for her to walk erect, and with evening chills after any exertion during the day. It is probable that in this case the fall had caused the partial rupture of a previously distended tube.

In all the cases of pyosalpinx there was a history of repeated attacks of pelvic pain and inflammation, which often confined the patient to bed for several weeks. In two there was also ovarian abscess. In these cases the abscess cavity in the tube communicated directly with the abscess cavity in the ovary, and the origin of the ovarian abscess was obvious. In Case VII. (salpingitis and abscess of ovary), however, there was no pus in the tube. The tube was enlarged, adherent, and its fimbriated extremity was closed; and it did not communicate with the cavity of the ovarian abscess. The ovarian abscess contained about half an ounce of pus and had a distinct pyogenic membrane. He thinks that abscess of the ovary is of more frequent occurrence than works upon gynecology admit. And though it probably is in general due to ovaritis caused by inflammation of the tube, yet it is not always associated with pyosalpinx.

In two cases of double pyosalpinx (Cases V. and IX.)

a thin purulent fluid was found in the peritoneal cavity, and the intestines were found to be deeply congested when the abdomen was opened. The patients had probably been suffering for some time with general chronic peritonitis excited by the escape of pus from the distended tubes. The symptoms, however, before operation had not pointed to general peritonitis, the patients having only complained of pelvic pain and pain in the back. The chance that such a condition may occur in connection with pyosalpinx is a strong argument in favor of removing these abscesses by abdominal section, instead of evacuating them by the vagina, as is so often done.

The danger of assuming any case of peritonitis in a woman to be idiopathic, without a thorough vaginal examination is obvious. He has the report of a case which occurred recently, where the patient was treated for several weeks for idiopathic peritonitis, and an operation done a few hours before death revealed double pyosalpinx and a ruptured ovarian abscess.

In six of the cases reported, an abdominal drainage tube was used. The average time of convalescence in these cases was no longer than in the cases where a tube was not introduced; and the severity of the symptoms following the operation—the elevation of temperature, the rapidity of the pulse, and the pain—were much less marked in the drainage tube cases than in the others. The absence of pain in the drainage tube cases is probably due to the fact that most of them were cases of pyosalpinx where the tissues which were ligated and cut were so far degenerated that their sensibility was much diminished.

He thinks that the danger of abdominal hernia following the use of a drainage tube is exaggerated. In one of his cases there is now a small hernia, but it occurred above the position of the tube and was probably due to some error in introducing the sutures. In some thirty drainage tube cases which he has seen in the practice of Dr. Joseph Price, there has, as yet, been no hernia. It is probable that hernia is due more frequently to a long or a high incision, and careless suturing, than to a drainage tube.

The average length of time before the glass drainage tube was removed in his cases was about five days. The shortest time was two days, and the longest eight days. In but one case did the discharge from the tube become purulent. The use of a cotton rope to act as a capillary drain adds greatly to the value of the glass drainage tube. It prevents any fluid from remaining in the bottom of the tube, and it removes the deposits of fibrin from the perforations in the glass.

Case X. Dermoid cyst of the ovary. He reported in detail. The patient was forty three years old. She had had three children and five miscarriages. She had first observed the tumor eighteen months before the operation. It rapidly increased in size, and when removed it was about six inches in diameter. It had never been accompanied by pain. The rapid growth of this cyst and the late period of life at which it was first observed are very unusual. The patient also had a much distended gall bladder, and at the operation a calculus was felt obstructing the cystic duct. During the operation the dermoid cyst was ruptured, and the contents, consisting of very oily material and many fine hairs, escaped into the abdominal cavity and were removed with great difficulty. It was only after thorough sponging and irrigation that the peritoneum was cleansed. A drainage tube was introduced.

The patient suffered from severe shock after the operation. For the first three days the temperature remained normal or slightly subnormal. The pulse was about 115. There was considerable abdominal distention and pain; there was not much discharge from the drainage tube. On the third day large quantities of bloody serum began to flow from the drainage tube. At the same time the tympany and general abdominal pain became much increased. The temperature ranged between 97.5°–100.5°. The pulse was 130 to 140. The respirations were 40 or over. The tongue was coated, and there was constant hiccough and occasional vomiting. The bowels had not been moved, and there was no escape of flatus.

An ounce of sulphate of magnesia was administered daily, for several days, and many turpentine enemata were given. The enemata were retained for a few minutes, and when they were rejected a large quantity of flatus escaped. The bowels were not moved, and there was no escape of flatus at any other time. As the abdominal distention and pressure increased, large external hemorrhoids, which looked almost like a prolapse of the rectum, appeared.

On the fifth night a rectal tube was introduced, but it rendered but little service. Most relief was obtained from the turpentine enemata, and the patient frequently asked for them herself.

The hiccough and vomiting ceased on the sixth day. The discharge from the drainage tube continued to be very profuse, though of lighter color. The abdominal distention, the pain, and the hemorrhoids were unchanged.

On the seventh day after the operation the suture at the upper angle of the abdominal wound was removed, and the muzzle of a long syringe was introduced among the intestines in order to determine whether there was any collection of fluid in the abdomen which was not carried off by the drainage tube. No fluid was found, and the wound was reclosed.

On the eighth day the bowels began to act. There was profuse watery diarrhœa for twenty-four hours, accompanied by the escape of large quantities of flatus. At the same time all the symptoms of peritonitis began to abate; the abdominal distention rapidly decreased; the discharge from the glass drainage tube became so slight that it was removed. The hemorrhoids began to diminish in size, and by the tenth day they had disappeared. The diarrhœa ceased in two days, without treatment; and three weeks after the operation the patient was able to leave her bed.

He reported this case at length on account of the interesting phenomena attending the development and the subsidence of the peritonitis; and because it was treated throughout by sulphate of magnesia and rectal injections, and not by opium. It was not found necessary to use opium in any of the cases reported in this paper.

DR. J. M. BALDY said that in many cases of pyosalpinx if a wealthy woman refuses to take the risk of the knife, she can, by proper treatment, be made comparatively comfortable without great risk of her life. However, the majority of cases of pyosalpinx, even among the wealthy, demand surgical interference sooner

or later. If, on the other hand, the patient has to work for her living, and is suffering with recurring attacks of peritonitis, he thinks that there the operation is called for always. The risks of the operation are comparatively slight. It can be performed by any general surgeon if he has a cool head and good surgical resources.

The use of salines in the treatment of peritonitis is a point of extreme interest. From what he has seen of such cases he has no doubt that the treatment by opium is a great mistake. Where there are the signs of beginning peritonitis, the use of large concentrated doses of salines rapidly relieves them. While the use of opium favors the occurrence of adhesions, salines would naturally tend to do away with trouble of that kind. Opium shuts up all the avenues of escape for the product of inflammation, and then tends to increase the trouble rather than to alleviate it.

Dr. J. Price was surprised at what Dr. Baldy had said with reference to pyosalpinx when he realizes how much trouble may come from a little pus. A case of pyosalpinx is always in danger. They suffer constant pain, they go down rapidly and die.

Dr. J. C. Da Costa could not agree with Dr. Price with reference to pyosalpinx. Others who have had a large experience, when asked with reference to their method of treating this affection, also differ from him. One gentleman, with a large experience in the removal of ovarian tumors, had told him that he had seen many cases of pyosalpinx, but that they had all recovered without operation. His experience is much the same.

Dr. J. Price said that it is never safe to allow the pus to remain. It is not necessary always to remove both ovaries, as is often done in operating for ovarian tumors.

Dr. M. Price challenged the statement that salpingitis does not cause much trouble. He has recently had a case which had been under medical treatment for five years. Two years ago an abscess burrowed down through the cellular tissue and discharged between the bowel and vagina. This case had been operated on five different times for fistula in ano, with entire removal of the recto-vaginal septum by operations, and until four weeks ago it had not been suspected that it was a case of pyosalpinx. These cases cannot be cured by simple medical treatment. There is no single case, that he has seen operated on, which stood one chance in fifty of living six months if the operation were not done.

Dr. W. H. Parish had no doubt that those who advocate this operation will agree that not all cases of disease of the appendages demand operation. August Martin has said that three-fourths of the cases of disease of the tubes and ovaries do not require operation. There are also cases of gonorrhœal affections of the tube which do not demand the operation. He has seen one case where the inflammation of the tubes followed the occurrence of gonorrhœal inflammation of the vagina, and in which the trouble subsided; the woman subsequently became pregnant.

With reference to the removal of ovaries and tubes that contain pus, he said that we all know that these cases may continue for years, but suffering from repeated exacerbations of inflammation. These patients are always in danger from the thinning of the tubal or ovarian wall, with the escape of pus, and the occurrence of general peritonitis. If we look over the records of any hospital or board of health, he thinks that we shall now find few deaths compared with the past, recorded as due to pelvic abscess and general peritonitis. He thinks that many cases of pelvic abscess and of general peritonitis have been in their origin cases of pyosalpinx. He is strongly in favor of the removal of the tubes and ovaries where there is pus. While a patient may enjoy a certain amount of comfort with pus in the tubes, yet she will be liable to frequent exacerbations, and may have her life placed in great danger at any moment.

He is sure that the operation for the removal of tubes and ovaries in pyosalpinx or ovarian abscess has come to stay, no matter what the future position of the operation for other conditions may be. He thinks that those who urge the treatment of these cases without operation are doing great injustice to a considerable number of patients, and also no little injustice to the surgery of today. His own experience with the operation warrants his endorsement of it.

Dr. Penrose said that such tubes as he had shown are useless and dangerous to the woman. They could not permit the passage of spermatozoa or ova. He thinks it is proper to open an abscess wherever it occurs, and not to trust to nature; and when possible to make a complete removal not only of the pus but of the abscess walls, as we do in pyosalpinx. In cases of pyosalpinx said to have been cured by medical treatment there is always an element of doubt with regard to the diagnosis. Such cases may sometimes occur. But there are few physicians skilful enough to make a positive diagnosis of pyosalpinx before the abdomen is opened. All of the cases on which he has operated had had several months or years treatment in the hospitals before the operation was performed.

CORRESPONDENCE.

LAPAROTOMY FOR STAB-WOUNDS OF THE ABDOMEN.

To the Editor of The Medical News,

Sir: I trust you will pardon my presumption in criticising a statement in the editorial of December 3d, on "Laparotomy for Gunshot Wounds of the Abdomen." You say: "In stab-wounds the lesion must be limited to the region of the wound, hence it is not necessary to perform median section, and make an extensive examination of the bowels; but in gunshot wounds, unless the bullet is of very small size median section had best be performed."

In view of my own experience with stab-wounds of the abdomen, in which abdominal section was performed, which is limited, I admit, to three cases, I must take exception to this statement. If the surgeon merely enlarge a wound in the lateral part of the front of the abdomen, and endeavor to examine the condition of the intestines, he will find that he is obliged to work through a very thick portion of the abdominal wall, and that he is very much restricted in making a thorough exploration of the contents of the abdomen.

Stab-wounds, if made by long knives or stilettoes, are liable to injure the intestine in as many portions as a bullet, and I do not think that your statement is correct, which says that the intestinal lesions in stab-wounds must be limited to the region of the wound. In one of

the cases in which I was satisfied with enlarging the original wound, I spent a great deal of time, on account of the difficulty of working through the thick abdominal wall, in sewing up two intestinal wounds, after which I closed my incision. The patient died a few days later, and the autopsy showed active inflammation of the peritoneum, and a third wound of the intestine which I had overlooked. The wounds which had been treated by suture were in good condition and in process of cicatrization.

In another case in which I at once made median section, I was able to explore the abdominal cavity with more satisfaction, sutured the wounds which were found, and was gratified by the complete recovery of my patient. These two cases, which occurred in the Pennsylvania Hospital, convinced me that in most cases it is better at once to make an incision in the median line rather than to enlarge the original wound, especially if that wound be so far away from the median line as to involve the oblique muscles of the abdomen.

This opinion is strengthened by a case which I had a few days ago at St. Mary's Hospital, and in which, after enlarging the wound, I was obliged to content myself with suturing the single wound discovered in the intestine, and rapidly replace the protruded bowels, because of the approaching dissolution of the patient, who was almost moribund when admitted.

At a recent discussion in the American Surgical Association, in commenting upon this subject, I took occasion to say, in referring to the first case here mentioned, that I believed death occurred because of the method in which I did the operation. My words at the time were as follows: "I very unwisely, as I now think, enlarged the wound instead of making a median section, hence, I had to work through a thick, muscular part of the abdominal wall and found it very difficult to examine the gut properly. As the result, the time occupied was long, and, on account of the patient showing symptoms of collapse, I closed the wound, thinking I had sutured all the intestinal punctures."

The fact that stab-wounds of the abdomen, treated by laparotomy, have not been so frequently reported as gunshot wounds so treated, has induced me to take the liberty of making this criticism.

Yours very truly,

JOHN B. ROBERTS.

1617 WALNUT STREET, December 6, 1887.

NEWS ITEMS.

THE MEDICAL CORPS OF THE NAVY.—The Washington correspondent of the New York *Times* states that it is probable that a bill will be prepared by the Surgeon-General of the Navy having for its object the improvement of the condition of the assistant and passed assistant surgeons of the navy. This bill he will present to Congress. Secretary Whitney will, of course, be consulted before any steps are taken in the matter. If the Secretary approves the plan, every effort will be made to secure the passage of the bill. It will provide for better pay for these officers, and in other ways increase the inducement to enter the service. It is at present an impossibility to fill existing vacancies in the corps. There are thirteen places to be filled. The examination for admission is extremely difficult, and while many apply for appointment, few answer the requirements. The Surgeon-General desires to keep up the present high standing, but knows that if the examinations remain as rigid as now, and the inducements to enter the service are no greater, there will be even a greater number of vacancies than now. At this time thirteen assistant surgeons are needed. Notice has been received from the Medical Board in Philadelphia that Dr. George McCaw Pickrell, of Richmond, Va., passed an examination for appointment as assistant surgeon. If he accepts a commission, there will be twelve vacancies yet to be filled. These will be readily disposed of if the salaries of the assistant and passed assistant surgeons are increased sufficiently to compensate for delayed promotion.

THE NEW YORK CANCER HOSPITAL.—The project of establishing a special hospital for the treatment of cancer, which was inaugurated three years ago by the incorporation of the New York Cancer Hospital, has now been carried out in part by the completion and equipment of one pavilion, intended for female patients only, which opened its doors on December 7th.

The necessity for such a hospital has been acknowledged by the highest medical authorities, and its advantages will be appreciated by all. It will supplement the work of general hospitals in caring for patients whom they do not receive; and, being devoted exclusively to cancer, it will offer the best possible opportunity for the treatment of that disease. Its object will be, furthermore, to test and compare the results of different methods of treatment, to collect statistics for study by the accurate observation of a large number of cases, and to try new remedies.

To carry out these objects, the present building has been constructed after the most approved plans, and with a view to the needs of this class of patients. The situation is healthful, opposite Central Park, and the grounds are ample, embracing a plot fronting on Eighth Avenue, and extending two hundred feet on 105th and 106th Streets. There are four circular wards, which is the form best adapted for ventilation and freedom from dust. These will accommodate forty-four patients, while sixteen private rooms will give place for twenty patients, who desire such accommodation, or for those who require isolation. A well-appointed operating-room, an autopsy building outside the walls, and a separate laundry building and boiler-house are other features of the hospital. The present pavilion has all the accommodations for the executive work of the entire building when completed, and the laundry and boiler-house have been constructed with the object of supplying this addition.

All patients suffering from cancer, whose condition admits of cure or relief, will be admitted by the superintendent with the approval of one of the medical officers of the hospital.

Patients living out of town should submit to the superintendent an application in writing, accompanied by a statement of their case by some responsible physician, before presenting themselves at the hospital.

The charge for board in the wards and private rooms will be at rates fixed by the Executive Committee. These rates will include all expenses except those of a special nurse. All charges may be remitted in whole or part by the Executive Committee.

The staff of the hospital is as follows:

Attending Physicians and Surgeons.—Drs. James B. Hunter, A. Brayton Ball, Clement Cleveland, Francis P. Kinnicutt, and William T. Bull.

Assistant Physicians and Surgeons.—Drs. B. Farquhar Curtis, J. S. Hawley, H. C. Coe, and W. G. Thompson.

The Medical Department of Dartmouth College conferred the degree of Doctor of Medicine upon 26 graduates at its recent commencement on November 22d.

A French Edition of Mundé's Work on the Use of Electricity has been received. It is translated by Ménière, editor of the *Gazette de Gynecologie.*

Fire in the Laboratory of L'École Pratique de Médecine at Paris, recently caused damages estimated at $20,000. Its source was a burning gas jet. Inflammable chemicals aided the spread of the flames until the Physiological Laboratory was set on fire, where much valuable apparatus was destroyed.

Contagious Pillows.—The *Lancet* is exercised over the dangers of contagion from pillows, and expresses its fears as follows:

Trade, we know, has always had its tricks, and with most of those who practise them it matters little whether they are or are not as harmless as they are profitable. If goods look well from the outside, and if they sell well, questions relating to their internal quality and their real value are too often settled by reference to that convenient rule of doubtful equity—*caveat emptor*. The principle of this adage was probably never quite a fair one. In all cases requiring technical knowledge, and their name is legion, it must allow the dealer a distinct advantage over the purchaser. We must remember also that the former may himself have been deceived. It is not he who is primarily responsible for the hidden faults of quality by which the most cautious buyer may be defrauded. It is the maker, who, with his eyes open, provides for a cheap market not only cheap and inferior, but essentially bad material. Let us quote an example. A correspondent exposes the dangerous but common practice of stuffing pillows with rags and scraps of clothing of every variety and degree of dirtiness. He suggests with much force that some of those outbreaks of fever which arise from time to time in schools and families from no apparent source, domestic or external, may be traceable to this dishonest and filthy custom. The maxim wherein cheap and nasty are interchangeable terms, is fitly illustrated by our correspondent's description, and the remedy for the evil he denounces is largely in the hands of the public. In part, also, it is within the power of the sanitary authority. The agents of that body must, and constantly do, destroy what they can of unwholesome bedroom litter in houses where fever has been prevalent. If they will exert their discreetly unsparing zeal for cleanliness wherever, among rich or poor, the tradesman's heedless trick is planting the seeds of disease, we may expect to see some change or the better, at least in one false custom of our time.

St. Jacob's Oil in England.—The following endeavor to protect the British public against the use of a secret nostrum, as narrated by the *Lancet* of November 19, 1887, is certainly worthy of imitation:

Mr. Justice Kay, in the Chancery Division, in the case of C. A. Volger and Co. *v.* Middleton, was asked the restrain the defendants from advertising and selling an oil as St. Joseph's Oil, as being an infringement of the plaintiff's trade mark, and calculated to deceive the public. Mr. Justice Kay said that both the plaintiffs and defendants were vendors of quack medicines which were largely advertised to heal all manner of external injuries. He declined to rule that the use of any saint's name in the calendar was an infringement of the plaintiff's trade mark. But lest either party should use his judgment as an advertisement, he hoped they would add that no one should employ either preparation except under medical advice. The judge's counsel is excellent. It is too much to expect that the parties to the suit will publish it. But we gladly give it publicity and praise.

Market Brands of Condensed Milk.—From the *American Analyst* of November 15, 1887, we learn that the Dairy Commissioners of New Jersey have caused analyses of the samples of condensed miik sold in that State to be made, with the following results:

Milk condensed without cane sugar is better for infants and invalids, but not keeping well, even in sealed cans, is of doubtful value. Milk preserved with cane sugar, if carefully prepared, keeps well in cans and does not spoil very rapidly, even after the cans are opened, provided the latter are kept dry and no water is mixed with it. The very large amount of cane sugar necessary to preserve milk renders it, however, an unwholesome food for infants, and such milk can by no means be regarded as a good substitute for fresh milk for this use. Condensed milk preserved with sugar is not fit food for infants. The directions on the cans in general state that, by adding a certain quantity of water, the condensed milk can be made to resemble cream; by adding more, it becomes the equivalent of milk. This can never be true; cream contains from three to four times as much fat as the average condensed milk, and no dilution with water will make such milk resemble cream, except outwardly.

Many manufacturers make false statements as to the quantity of fresh milk condensed to produce the contents of the preserved milk cans. The condensation is rarely more than threefold and usually somewhat less. A well-made condensed milk, with cane sugar, should show no undissolved sugar and be of a nearly white color, having but a faint yellowish tinge. It should have no cheesy taste or smell and should dissolve readily in about four parts of cold water. Especially should it dissolve without showing separated flocculent particles of casein or curds. Out of sixteen samples, analyzed, two of which were condensed without sugar, the analyst found that only nine were in good condition and well put up. Of the other seven one had fermented, one contained a considerable amount of undissolved cane sugar, a third was stiff, had a cheesy smell, curdled, was of a brownish color and altogether of an inferior quality. Two others had attacked the metal of the can. One was a dark brownish glutinous mass, with a smoky, cheesy taste and odor. Glucose had been used as a substitute for cane sugar. Another sample

was still brownish in color and cheesy. These facts show the error that it is necessary to exercise in purchasing and using condensed milk.

Shall the Language of Prescriptions be Simplified?—*The Lancet* of November 19, 1887, writes as follows on this point: "There is among medical practitioners no appearance of opposition to substitute for the names of chemical terms hitherto used in prescribing their simple and common preparations or ingredients in the vernacular. The reform is one which has our approval. In making this admission, however, it is necessary to define with some precision the extent of its application. For the purpose of the present argument, a prescription may be conveniently regarded as consisting of a professional and a popular part, the former being concerned with the selection of drugs and their quantities, the latter with directions for their use. The first great principle that should belong to such directions is, we take it, clearness. That meaning may be plain beyond all degree to misunderstanding on the part of unprepared persons, a point which is to be expected in words of vague and abbreviated sense charged in regard of their single current ambiguity. The advantage contested by accustomed scientific language in the case of such words as 'ad libitum' or 'quantum sufficit' is that of precision to the person to whom its employment, good, and to the readiness to come to more or a choice in the matter of interpretation, is not difficult to gain. These editors, among all parties, have been in common ground that has led to their notifying their wish and intention on the sole and their simplest and surest means of communication is the native tongue. In our instances where a word is translated into the vernacular of a prescribed measure. These are the special subjects of governance, and a close and exact attention to the use of such words without any ambiguity, and to the means of treatment, is of the last importance. Whether for the purpose and to allow of advantage by the use of the extreme medium of a compromise is decidedly preferable to any other course. We are disposed to opinion that the best and most practical result of the reform in prescribing which is now in progress will be to leave the body of the prescription in the convenient Latin and the form, and to insure the most accurate observance of instructions to the patient by expressing these in the language of every day life."

Deodorization of Hands Impregnated with Iodoform.—Iscovesco, in the *Bulletin de la Société Pharmaceutical Society of Bordeaux*, advises the vigorous scraping of the hands, upon washing them in water to which is added fragments of the shell of Cuttle fish, when the odor disappears completely.

The Duty of the State and Society in Checking Inebriety.—The International Congress of Hygiene at Vienna, in a full and interesting discussion on inebriety, urged upon the State and society the duty of working to check inebriety by the spread of information regarding the evils of alcoholism, the further passing of mild, non-injurious laws regarding the promotion of the hygiene of the poor, the proper segregation and medical care of the inebriate. It is the especial duty of the State to see that the sale of highly alcoholic liquors is lessened as much as possible by taxation; to secure the sale of pure liquors only; to maintain proper police supervision of drinking shops; to commit drunkards to proper institutions for treatment as promptly as possible. The continued treatment, medical and hygienic, of the drunkard is of paramount importance.—*Wiener medizinische Presse*, October 30, 1887.

The Examination of Water.—Dr. Parkes, of London, after reviewing the various methods of examining water, concludes that chemical analysis, aided by microscopic examination, is sufficient in the great majority of cases to determine the amount of organic pollution of a water, and whether it is of recent date. In many cases the source of the pollution, whether from sewage or vegetable matters chiefly, can also be determined; but there is no possibility of ascertaining whether the water thus polluted is actually potent for evil or whether it may not be entirely harmless. Chemical analysis is powerless to deal with those cases of infinitesimal pollution of a pure water with infective material from the human body. Cultivation tests are equally powerless to cope with such cases. The only possible way of ascertaining the probable effects on the human system of drinking such water, is for the operator to apply to the experiment on his own person—a course not likely to be pursued. The cultivation tests, as now practiced, add very little to the results obtainable by chemical analysis. Micro-biology must undergo further development before germ-culture methods can be expected to throw much light on water pollutions. Hence, the sanitary survey of the source of the water, as far inside of storage, should always be carried out whenever any doubt exists as to the freedom of the water from all possible sources of contamination.—*Pharmacist*, November, 1887.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 29 to December 5, 1887.

Burtonshaw, H. P., *Surgeon and Assistant Surgeon*.—The leave of absence granted by Orders No. 52, Fort Myer, Virginia, November 23, is extended twenty three days.—*S. O. 255, Division of the Atlantic*, November 28, 1887.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Three Weeks ending December 5, 1887.

Wyman, Walter, *Surgeon*.—Granted leave of absence for four days, November 29, 1887.

Williams, L. L., *Assistant Surgeon*.—Granted leave of absence for twenty-one days, November 18, 1887.

Kinyoun, J. J., *Assistant Surgeon*.—Leave of absence extended seven days, November 29, 1887.

Wyman, D. B. M., *Assistant Surgeon*.—Granted leave of absence for fourteen days, December 5, 1887.

The Medical News *will be pleased to receive early intelligence of local event of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local letters containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course it necessarily for publication.

All communications relating to the editorial department of the News *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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ORIGINAL LECTURES.

ANTISEPTICS: HOW USED AND HOW MADE AT THE NEW YORK HOSPITAL.

A Clinical Lecture.

BY ROBERT F. WEIR, M.D.,
SURGEON TO THE HOSPITAL.

IN beginning my annual course of clinical lectures I wish briefly to place before you in a practical way how antiseptic dressings are made and used in this hospital. I have little or nothing new to present to you concerning the great truths upon which the antiseptic treatment is based. It is known to you all that we are continually surrounded by germs of many varieties. Miquel has found, for instance, that the ordinary atmosphere of a large city contains over 2000 bacteria per cubic yard, while the air of a room of an old house in winter will show bacteria to the amount of 45,000 per cubic yard, and again that the wards of a long-used hospital will hold as many as 90,000 germs in the same space. This same observer has shown, and others have confirmed it, that sea air contains scarcely any of these micro-organisms, and that mountain heights are as nearly free from them for obvious reasons; also that there are more of them to be encountered in our houses and hospitals in winter than in the spring time and in summer.

But all these microörganisms are not infectious, or, speaking more strictly to what chiefly interests us, are not capable of begetting inflammation and suppuration. Only relatively few of them can do this. I will not stop to enumerate even this short list of infectious germs. I shall only dwell upon the two facts, that one of them, the so-called staphylococcus pyogenes, is the factor in producing suppuration in the large majority of instances. Reliable authorities say that they exist in seven-eighths of the cases, and that no formation of pus can be brought about clinically or experimentally save by the aid of such or similar organisms, or by the ptomaines or juices that they create. With these facts at hand you can easily grasp the subject of antisepsis.

There is perhaps one other point that can here be appropriately placed before you; it is that the living tissues of the body have a certain power of resistance to the evil influence of germs, and it requires, according to the Scotch observer Cheyne, an appreciable amount of infectious germs to make an inroad upon the system. This explains why we are not all destroyed whenever a scratch occurs on the finger, etc.

From the foregoing remarks you can readily see that the destruction of infectious germs or the hindering of their natural multiplication is the end of our antiseptic treatment. Lister's dictum, that you should act as if you saw germs lighting on every wound you have to do with, leads to a correct treatment. You should try to kill them as you would a flea, and you have a better chance with the germ than you have with the insect. Cleanliness alone will not do this—wash your hands as you will, your ordinary instruments, or your sponges with soap and with water, and yet in testing all these with the well-known culture tests, colonies of bacteria will be developed, this Kümmel[1] has fully proven. Cleanliness, personal and otherwise, is of great moment, and it will make a vast improvement in your surgery; but unless you conjoin with it large experience and marvellous skill, you will hardly equal the tyro who adds to cleanliness the use of antiseptic measures. Look for a moment at this table, which shows you at a glance the impression antisepsis has made upon the surgical world. Here are the names[2] of the masters of the chirurgical art acquiescing in using the principles just set before you. Their opponents who are worthy of such a rank, if named could be counted on the fingers of one hand.

TABLE I.

No.	Surgeon.	Locality.	Antiseptics.
1	Mitchell Banks,	Liverpool,	Sublimate and carbolic spray.
2	Whitehead,	Manchester,	Carbolic spray.
3	Macewen,	Glasgow,	Strict antisepsis.
4	Ogston,	Aberdeen,	Carbolic acid.
5	Keith,	Edinburgh,	Carbolic acid, except in spray.
6	Annandale,	Edinburgh,	Sublimate dressings.
7	Péan,	Paris,	" "
8	Lücke,	Strassburg,	" "
9	Kœberlé,	Strassburg,	Alcohol flame, carbolic acid, and boiled artificial sponges
10	Czerny,	Heidelberg,	Subhmate.
11	König,	Göttingen,	Sublimate and iodoform.
12	Volkmann,	Halle,	" " "
13	Gussenbauer,	Prague,	Sublimate. "
14	Nussbaum,	Munich,	"
15	Winkel,	Munich,	"
16	Krönlein,	Zurich,	"
17	Kocher,	Berne,	"
18	Billroth,	Vienna,	Sublimate and iodoform.
19	Albert,	Vienna,	" " "
20	Julliard,	Geneva,	Carbolic acid.
21	Terrier,	Paris,	Sublimate and carbolic acid.
22	Championnière,	Paris,	" " " "
23	Bergmann,	Berlin,	Heat, sublimate, and iodoform.
24	Hahn,	Berlin,	Sublimate and iodoform.
25	Esmarch,	Kiel,	" "
26	Schede,	Hamburg,	Sublimate.

A considerable variety of antiseptics are in vogue, and every little while a new one appears which is claimed to possess advantages over its predecessors, but the trials made in the operating-room and in the laboratory show, so far, that carbolic acid and corrosive sublimate

[1] Kümmel: Die Kontakt- und Luft-infection in der praktischen Chirurgie, Centralbl. f. Chirurg., 1885. Beilage 326.

[2] From Senn, Four Months Among the Surgeons of Europe, and other sources.

lead, like Dr. Adhemar's name, all the rest. I have taken pains heretofore to present to you a list of germicides taken from the works of Koch and Sternberg, to show you their relative values, but to-day I can give you, through the kindness of Dr. Weeks[1], of this city, who has kindly placed his advanced proofs at my service, another list, which embraces not only his own bacteriological investigations, but those of other observers. These you will see in Table II.

TABLE II.

From the investigations of Dr. Weeks, of New York.

	Antiseptic.	Strength	Duration of exposure to destroy vitality of germs
1.	Corrosive sublimate,	1 to 500	10 seconds.
	" "	1 to 1000	45 "
	" "	1 to 2000	1½ minutes.
	" "	1 to 5,000	3 "
	" "	1 to 10,000	5 "
	" "	1 to 20,000	12–15 "
2.	Bichloride and mercury [illegible].	1 to 10,000	4 days
	Sublimate [illegible],	1 to 10	4 seconds.
	" "	1 to 25	5 "
	" "	1 to 50	12 "
	" "	1 to 200	1 minutes.
3.	Chloride [illegible],	1 to 25	15 seconds
	" "	1 to 50	1 minute.
	" "	1 to 200	4 minutes.
4.	Arsenic,	Nascent upon dried germs, very powerful when active principle [illegible]	
	"	[illegible]	4 12 seconds.
	"	75 per cent.	2 30 "
	"	50 per cent.	12–15 minutes.
5.	Salicylic acid, [illegible]	[illegible] water	
	4 [illegible] solution]		
	" "	1 to [illegible]	1 minute
	" "	1 to [illegible]	4 "
6.	Permanganate of potash, [illegible]	make a mixture [illegible] in 1½ parts water	
	" "	1 to 10	25 seconds.
	" "	1 to 100	1 minute.
	" "	1 to 200	2 "
7.	Chlorine water, very unstable, [illegible]		
8.	Hydrogen peroxide,	" "	[illegible] "
9.	Iodine and [illegible]	[illegible]	[illegible]
10.	Iodoform [illegible]	[illegible]	[illegible]
11.	Carbolic acid,	1 to 20	2 hours.
12.	Thymol,	[illegible]	[illegible]
13.	Benzoic acid,	[illegible]	[illegible]
14.	Cinnamon oil, [illegible]	[illegible]	[illegible]
15.	Iodoform, [illegible]	[illegible]	[illegible]
16.	Boiling water, [illegible]	[illegible]	[illegible]
17.	Boiling water, [illegible]	[illegible]	[illegible]

Whoever ignores you that has kept abreast with the current literature will not be surprised at two things met with in the list. First, that the fact taught us several years since by Koch, has been confirmed by Dr. Weeks, that oily solutions or mixtures, of the various antiseptics have no value other than is slowly exerted by the fatty matters themselves; and, second, that iodoform, concerning the power of which in germs much has lately been written, exerts its germicide action but slowly. On this point of the value of iodoform in controlling inflammation—ordinary and tuberculous—I may say that the clinical experience of surgeons is in favor of its usefulness, and is decidedly opposed to the laboratory deductions. The discussion of this subject, however, has developed the fact that this substance in dry powder often contains germs, and that it works best when acted upon and changed by wound secretions. Practically, it is nearly always used here in a dampened condition in conjunction with the moist sublimate gauze, and in this combination it is leaned on heavily as a supporter of antisepsis.

To the list of chemical germicides must be added one other which possesses advantages beyond these in safety, cheapness, and accessibility. I refer to the action of heat. A temperature of boiling water will destroy the life of surgical germs, though in some varieties a greater heat is necessary to kill the life of the more resisting spores. Freshly boiled water cooled in covered vessels or by the admixture of water boiled and cooled the same day is coming here more and more into use for the purposes of washing or irrigating wounds, and in Germany the dressings are also sterilized before each operation by heat and used without any medicated impregnation.

If you watch the preparations and the antiseptic technique of this amputation of the forearm, which will be now performed by the House Surgeon, you will gather the main points of the antiseptic treatment of a wound. You will notice first that the instruments, which are either made, handles and all, of one piece of steel, or that the handles are of hard rubber baked on so as to leave no crevices,[1] are, with the needles, scrubbed with green soft soap and water and placed in boiling water for ten minutes, and then into carbolic acid water, 1 part to 20, for at least the same time. The ordinary yellow soap contains germs in abundance according to Eiselberg, but it can be used if previously soaked for half an hour in 1 : 1000 sublimate solution. All the sponges which have been cleansed by Keller's[2] method, or by washing

[1] This article is entitled "The Antiseptic Value of the Topical Remedies used in Ophthalmology, and the Methods of Sterilizing Instruments: Tested Bacteriologically"—and was read before the Section on Ophthalmology and Otology at the Academy of Medicine, October 17, 1887, by Dr. John E. Weeks, and will appear in full in the next number of The Archives of Ophthalmology.

[1] Some excellent ones are now made in Germany by heavily electroplating over wooden handles. This obviates the too great weight of metal handles.

[2] In this method the new sponges, after having been rid of the sand by shaking and beating them, are thoroughly washed in warm—not hot—water, for if hot water is used it deteriorates the quality of the sponge substance, and tends to fix the dirt within its meshes. This is particularly so if the sponges have already been used at an operation. The sponge is then placed in a 1 to 1000 solution of permanganate of potash for twenty four hours. If the permanganate is found to be losing its beautiful pink color, a little more may be added. At the end of this time the permanganate of potash is washed out with warm water. The sponges are now bleached by immersion in a solution composed of one part of sulphite of sodium to one hundred parts of water, to which has been added a one fifth part of a watery solution of hydrochloric or oxalic acid of a strength of 8 parts to 100. They are stirred up with a stick for a few minutes, until they whiten; if left longer they will become friable. Then they are washed out with water again, and left for some time in running water. The sponges

simply with green (or whale oil) soft soap and water, are taken from the jars, where they have been soaking several days in a 1 : 5000 sublimate solution, and squeezed out in a similar fresh solution placed in glass basins.

In the meanwhile the hand and forearm, after the Esmarch bandage has been put on, have been scrubbed diligently with soft soap and a brush, which attention has already been given by the operator to his own hands, and finally, after this has been done the parts are washed off with 1 : 1000 sublimate solution, or with alcohol, and in particular cases with both fluids. The operator then dips his hands in the basin containing a 1 : 1000 sublimate solution, and taking a knife handed him by a similarly prepared assistant, he begins cutting.

Discard for the present the steps peculiar to the amputation, and fasten your attention only on the antiseptic details. During the operation, from time to time, a 1 : 5000 sublimate solution (for stronger ones prove at times poisonous to the system) is allowed to trickle over the cut surface from a douche bottle, or from a sponge, and this is always thoroughly done before the wound is sutured. All the vessels are tied with catgut, prepared either by immersion for 12 to 48 hours in a watery sublimate solution of 1 : 1000, or in oil of juniper for 10 days, according to Cavel, and then kept in 95 per cent. alcohol until used. The drainage is effected by rubber or glass tubing, horsehair, or bundles of catgut, of relative value in the order named. These are also kept ready for use in sublimate solutions of the same strength. Neuber's bone drains have fallen into disuse with us; they not only drain poorly at times, but also render infection of the wound possible from their animal structure.[1] The sutures are likewise of catgut, a little heavier than that used for ligatures, and they are introduced with straight Hagedorn needles, which are supplied with a large eye, and admit, therefore, the ready carrying of catgut, and withal they are very sharp, penetrating the skin most readily. I prefer to employ now, and where I specially want primary union, a wrinkle of Kümmel's, though perhaps it is a refinement. I mean the loosely felted spun glass, which, duly sublimated, is laid on the sutured wound, and over this is put the absorbent dressing.

Observe the word *absorbent*—we are striving for a dressing that will not only prevent decomposition of the discharges, but one, also, that will promote dryness of the wound; for it has been found that germs require for their increase from fifty to seventy per cent. of moisture. The old Lister dressing, shut in with its rubber or Mackintosh covering, was an error in this respect. Now with the capillarity of my spun glass at work, all discharges are carried into my mass of mussed up sublimated gauze, which has been dusted on the surface next the wound with iodoform, and which is covered with a number of such clumps of gauze, and finally with a thick layer of absorbent (not borated, for this has no value) cotton, and the whole secured by a wet sublimated gauze bandage. If the wound is a large one, or one likely to have much secretion, or one where a redressing is to be postponed for a long time, small bags of sublimated peat (which is preferred by me to most of the other absorbents of like nature, such as wood-wool, moss, etc.) are placed next the wound, first duly dusted with iodoform.

A card has just been sent down to me by one of the students, asking why I do not use iodoform gauze over my wounds. I am glad the question has been put. My omission to use this kind of gauze is intentional. I found, several years since, that the iodoform gauze made then and now with some sticky substance impregnated in it, to hold in its meshes the iodoform, is apt to dam up the secretions from the wound and prevent the same from being freely sucked up by my absorbent material beyond; and though some improvement has been made in the gauze (of which that made from the rather expensive ethereal solutions is the best), yet, I now only use this form of gauze in open wounds, or where I wish to pack cavities, or to arrest hemorrhage by pressure, etc.

Now let me tell you how the sublimated gauze is made. The slight aniline color you see that it has, is given to it simply to distinguish it from the unimpregnated kind. You understand you may, at a pinch, use almost any loosely woven cotton or linen material, mosquito-netting or old napkins for instance. The gauze we have is made specially for the hospital, and is, indeed, nothing but cheese-cloth, which you can render absorbent by boiling in water to which a slight amount of soda is added to remove its greasiness, and then drying. You can also buy it in a better form of Am Ende,[1] who has devoted a good deal of time to the careful making of antiseptic preparations. But remember not to purchase the impregnated gauze, for unless it is carefully kept in a damp condition, and properly wrapped up in an impermeable wrapper such as rubber or gutta-percha tissue, or put in an air-tight glass jar, the bichloride will soon become changed into the comparatively inert calomel. In fact, even in quite freshly made but dry gauze, a large quantity of calomel will soon be found, and this and the remaining bichloride can perceptibly be shaken out of it; also, germs find a lodgement in the dry gauze. This will be alluded to in a few moments. By chemical tests I have found that well-preserved damp gauze had not appreciably changed its strength one month after its manufacture.

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are afterward put into a carbolic acid solution, 1 to 20, or in a solution of 1 to 1000 of the bichloride of mercury, and kept there until used.

Sponges so prepared, such as we use at this hospital, cost but about one cent and a half each: and at that price they may be thrown away after use at an operation. This is my custom in private practice; at the hospital it is the rule that, if the operation is one upon the rectum, the vagina, or other parts where contamination is likely to take place, the sponges used are afterward destroyed; in amputations and other cleanly operations upon the otherwise healthy subject, the sponges are cleansed for subsequent use. In all abdominal operations new sponges are employed. The sponges that are to be again used are washed thoroughly in running water, and afterward kept for some some hours in a weak carbonate of soda solution, to dissolve out the fibrin, etc., and then placed in the antiseptic solution as before.

The simpler plan, advocated by Kümmel, of only washing the sponges with green soft soap and water, and then placing them in a 1 to 20 carbolic solution, or in 1 : 1000 sublimate solution, has been followed by me for too short a time to speak positively as to its merits.

[1] So much does Kocher, of Berne, object to this influence that he has, according to latest reports, discarded catgut, and now uses only silk, freshly boiled.

[1] No. 1300 Broadway, New York.

The formula for making the sublimate gauze is this: One part of sublimate and two parts of common salt are dissolved in five hundred parts of water; the gauze is soaked in this for an hour, wrung out, and partially dried in a clean room. That is to say, it should not be made or handled in a hospital ward or sick room, and it should be kept in a moist condition in glass jars. The chloride of sodium is intended to prevent the conversion of the sublimate into calomel. Chloride of ammonium will also accomplish this. A small quantity of glycerine is of service in like manner, especially when the gauze is likely to be kept some little time. Here, however, gauze is used so rapidly that this precaution is not followed. This gauze has been made of this increased strength by experience which is supported by the recent tests of Schlange, to be presented in a few moments.

For making iodoform gauze I find the following gives the best results, and it can be made very rapidly, as you will see, for the nurse will make some while I describe the process: 3 drachms of powdered iodoform are mixed up with 6 ounces of ordinary Castile soapsuds, using a 1 to 5000 solution instead of ordinary water; this makes a temporary emulsion, which is poured over 3 parts by weight of absorbent gauze, which is equal to $2^1/_2$ yards, and evenly distributed through it by a short rubbing process. This will make a 10 per cent. gauze, and the soap will hold the iodoform satisfactorily in the meshes of the gauze. For a 25 per cent. gauze the iodoform needs to be increased to 7 drachms, the other proportions remaining the same.

When we wish to use iodoform in deep cavities, where frequent redressing is not desirable, as, for instance, after extirpation of the rectum or of the tongue, an iodoform gauze of a more adherent nature is often employed. This is prepared by pouring over 5 yards of absorbent gauze a mixture of

Iodoform	℥iiiss.
Resin	℥iss.
Alcohol	℥iv.
Glycerin	℥v.

I have said nothing so far concerning the spray; you will have already noticed that we do not use it often. It is of value, as Cheyne has proven, but irrigation so satisfactorily destroys the germs, that the spray is only now employed where irrigation is impracticable; as, for instance, in certain operations on the brain, or in the large cavities of the chest and abdomen, and in some of the operations on the joints; in all these I frequently use the spray.

Every conscientious surgeon will admit that his use of antiseptics is not always certain in controlling inflammation and suppuration. Theoretically this should be so. The gross errors we have learned, it is true, to avoid. With a well-trained staff of assistants, a surgeon versed in antiseptic work will have a success which may be claimed as a marvellous one; but even with such a person untoward results are likely to happen at any time. These accidents are not always easy of explanation, but the investigations of our German colleagues have shown us in what direction we should carry our researches in explaining these mishaps, which, were it not for the resistance of the tissues to germ influence, would be even more numerous than they are.

Several years ago I was led to point out the errors of the Lister dressing,[1] which from the volatility of the carbolic acid often became unreliable, and by a faulty method of preparing catgut often did damage. Since then Kümmel, of Hamburg, has also taught us how common infection of a wound is by the contact of sponges and instruments used, and by the hands of the surgeon and his assistants. He has, moreover, showed us how to avoid these errors by the procedures enumerated in a preceding page.

A more recent observer, Schlange,[2] of Berlin, has exposed to us that defects of no mean order are to be met with in our supposed aseptic sublimate dressings. He has proven after examination that all antiseptic bandage materials made by manufacturers contain without exception more or less microörganisms which are capable of liquefying gelatine—*i. e.* producing putrefaction; but that recently prepared moist gauze or gauze that has been rendered sterile by heat or boiling water can be considered free from germs; one might, therefore, consider that our use of the moist sublimate gauze can still be relied upon in spite of its occasionally irritating or blistering the surrounding skin.

The possibility of another error must also be kept in mind. It is that the value of the protection of the sublimate gauze where blood or other secretions are absorbed by it, is much impaired by the conversion of the sublimate into the inert albuminate of mercury. Schlange mixed equal parts of a 1:2000 sublimate solution and blood together and introduced in this mixture different bacterial germs, which rapidly went on to full development unhindered by the sublimate. Similar germs introduced into a solution of sublimate of the same strength without the blood admixture were rapidly destroyed. Moreover, as previously spoken of, the drier the wound can be kept the less will be the chance for germs to develop.

All these facts show us the weak points of the sublimate dressing, and the reasons why a recently boiled water and a dressing recently heated to the same degree of temperature offer ideal materials. It is perhaps a little more troublesome to make a dressing in this way than it would be to resort to the easier handled sublimate solutions and dressings, but a little ingenuity, in the possession of all of us, will obviate these difficulties. I shall certainly attempt to overcome them, and hope before the close of the winter to inform you of the value and of the simplest forms of preparing, and, what is more important, keeping the heated dressings.

ORIGINAL ARTICLES.

A CASE OF SUBDIAPHRAGMATIC ABSCESS.[3]

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THE following case came under my observation some months ago, and is of interest because of its comparative rareness.

[1] "The Weak Points in Lister Dressing," etc. THE MEDICAL NEWS, May 5, 1883.

[2] Ueber Sterile Verbandstoffe, 1887, xvi. Congr. der deutsch. Gesellsch. für Chir. Berlin.

[3] Read before the Montreal Medico-Chirurgical Society, December 6, 1887.

John R., aged sixty, carter, was admitted into the medical wards of the Montreal General Hospital under Dr. George Wilkins on April 14, 1887, complaining of a swelling in his right side.

History: More than a year before he had, after exposure, become thoroughly chilled and for a day or two was out of sorts; he then suffered from very acute pain in the epigastric region. He was confined to bed for less than a week, and then went about his work as usual, but never felt quite well. In two weeks the severe pain returned and was felt most in the right hypochondriac region. The pain was increased by inspiration and movement of the body. He also states that for a short time his skin was of a yellow color. He remained in bed a week when the pain left, and he got up and went about, but was unable to work.

In the middle of April, 1886, he had another severe attack of pain in the right hypochondriac region, and this time he remained in bed until the middle of July, 1886. He now first noticed a swelling in his right side immediately below the costal margin. He has never been confined to his bed since July, 1886, but has always suffered from slight pain in the right side—the swelling gradually increased. A couple of weeks ago, the swelling causing discomfort and rapidly increasing in size, he entered the General Hospital. During the whole period of his illness he never had rigors or marked shortness of breath.

The following was the condition of the patient on his admission to the hospital. I am indebted to Dr. Wilkins for allowing me to make use of this note from his case book.

"Well developed man, not emaciated or anæmic, skin cool and moist, no hectic, no jaundice, temp. 98.5°. Respirations and pulse normal. Bowels regular. Appetite good; sleeps well, but always lies on his right side. No history of dysentery or diarrhœa. In the right hypochondriac region is a large, painless, smooth, elastic, fluctuating swelling extending below the costal margin to within half an inch of the umbilicus, and laterally to near the median line; the lower border of the swelling is convex and yields to pressure; right side of the chest, from the third rib downward, is expanded; the intercostal spaces widened and bulging. Percussion note dull in front, and in the axillary line from the third rib downward; posteriorly it is dull from the middle of the scapula. Breath sounds are completely absent over this area. In upper part of right lung breathing is feeble and somewhat tubular in character. Left lung and heart normal. Urine healthy. It is not possible to make out area of liver dulness, or to feel the lower border of that organ."

On the 18th of April, Dr. Wilkins aspirated the fluctuating swelling in its most convex portion below the ribs, and drew off twenty-five ounces of creamy, sweet-smelling pus. This was examined microscopically, but no hooklets of echinococci were found; the fluid consisted of pus, blood, and some necrotic tissue. After the aspiration the patient felt much more comfortable, could sleep on his right side, and had no pain or nausea. He was transferred to the surgical ward and placed under my care.

On the 23d of April, having placed the patient under ether, I made a vertical incision in a line with the nipple, some four inches long, commencing immediately below the costal margin on the right side. This incision was over the most prominent part of the tumor. The parts were carefully incised, and when the wall of the abscess was reached it was found to be adherent to the abdominal parietes and to consist of a thick mass of inflammatory tissue. When the abscess cavity was opened there was a great gush of pus, and afterward each inspiration caused the contained fluid to flow out more freely. To facilitate the exit of the pus a large rubber tube was introduced so as to act as a siphon—in this way some eighty ounces of pus were drawn off.

The patient's condition now became alarming, his breathing became shallow, pulse hardly perceptible, and extremities cold. So the further evacuation of the pus was discontinued (although, apparently, as much remained behind as had been taken away) and restoratives applied. On exploring the cavity, the diaphragm could be felt above, reaching as high as the third intercostal space in front, and a probe introduced through the wound could be felt behind, between the fourth and fifth ribs; below, a thick mass of inflammatory tissue separated the abscess from the cavity of the abdomen. The liver could not be felt or seen, and there was no liver substance in connection with the abscess. Owing to the collapsed condition of the patient, the wound was rapidly sutured, a large drain introduced, a thick sublimated jute dressing applied, and the patient put to bed.

Under the influence of heat and stimulants he soon rallied. During the next three days there was a large discharge of pus and the dressings had to be changed twice daily. The temperature never rose above 99° F., the patient rapidly improved, and the abscess cavity, in a remarkably short time, was reduced to a very small size.

By the first of June the discharge of pus had almost ceased, the abdominal organs had resumed their normal position and the area of liver dulness was normal in extent. The breath sounds over right lung still continued feeble. The patient rapidly regained flesh and strength, and when discharged in August there was a narrow sinus, some four inches deep, which discharged a thin sero-pus. For the last three months patient has been at work and says he feels perfectly well. The sinus has, however, not yet completely closed. Breath sounds can be heard over the whole of the right lung, but at the lower part both in front and behind still rather feeble.

Remarks.—When first seen this was thought to be a case of either liver abscess or echinococcus disease. The absence of constitutional symptoms, the slow growth of the tumor, its smoothness, elasticity, and painlessness pointed to echinococcus disease, whilst the history of a chill, frequent attacks of severe pain, the jaundice in early stages, made one think it possible that it might be a case of liver abscess. The absence of a history of rigors and sweatings was a remarkable feature of the case.

The man, although a fairly intelligent Irishman, was not very observant, and did not give a very

connected history of his case, so that the facts were difficult to get at, and when obtained did not contain the whole truth. However, the aspiration showed the case to be one of abscess, and microscopic examination failed to disclose any evidence of echinococcus.

From the fact that when the tumor was opened no trace of the liver could be found, I have not the least doubt in my mind that the case was one of abscess which had originated between the diaphragm and the liver, and that the latter organ had been pushed downward and backward by the gradual collection of such a large amount of fluid.

I had intended making a counter-opening posteriorly to facilitate drainage, but the collapsed condition of the patient after the evacuation of so large an amount of pus warned me to complete the operation as soon as possible, and to get him back to bed. The result was quite as satisfactory as it would have been had a posterior opening been made. When abscesses are above the diaphragm a dependent opening is much more important than when they are below that structure. In the latter case the pressure of the abdominal walls on the contents of the abdomen always tends to obliterate any cavity that may exist. In this case it was remarkable how soon such an enormous cavity disappeared.

THE GERMICIDE POWER OF SULPHUR DIOXIDE.

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At the suggestion of Dr. W. M. Smith, Health Officer of the Port of New York, the writer undertook a number of experiments during the summer of 1885 to determine the disinfecting power of anhydrous sulphurous acid as used by the so-called "vacuum process." For various reasons the experiments were not reported at that time, but as the gas was then used for disinfection under quite new conditions, it has seemed advisable now to report the results as then obtained.

The vacuum process consists in principle in the exhaustion of the air from an air-tight receiver, in which the goods or materials to be disinfected have been placed, and in the subsequent introduction of the gas (as derived from liquid sulphurous acid) in pure form and under pressure. In the employment of the gas in this manner, as compared with its use in any previous experiments, two new factors come into action. The first consists in the formation of a vacuum and the consequent withdrawal of the air from the minutest pores of the materials to be disinfected, thus insuring penetration of the gas to every particle of the material; and the second, in its use in a volume of 100 per cent., and at any required pressure, varying from twenty to one hundred pounds to the square inch. The importance of these new features will be readily perceived when we consider the methods that have been previously employed in such experiments.

In the usual methods of disinfection with the gas, as well as in the various experiments which have been made from time to time to determine its disinfection power with the single exception of some experiments made by Dr. Sternberg, in which the gas was used in as high as 20 per cent. volume), the gas has been generated by burning a certain amount of sulphur to each cubic foot of space. In many instances this has been done in rooms which could not be tightly closed, and where the escape of the gas was necessarily very large.

Under these conditions the free sulphur combines in the process of combustion with two parts of oxygen from the air to form SO_2. It should be remembered, however, that combustion ceases from lack of oxygen when the oxygen of the air has been somewhat reduced, so that under the best conditions only four or five per cent. in volume of the gas is available. But probably not so much as this is ordinarily available, because SO_2 is much heavier than atmospheric air, the diffusion is not very rapid, and in the upper portions of the rooms in which the experiments have been conducted (as has been shown experimentally) the strata of air contain still less than in the lower. The diffusion of the gases would rectify this, however, if the exposure continued for a longer period of time. Then further, it was apparently shown in Sternberg's experiments that under these conditions the penetrating power of the gas was quite slight, even when the exposure continued for many hours; for instance, when the gas was effectual in destroying the life of certain microorganisms exposed to its full action, it was ineffectual under exactly the same conditions, if the rags previously soaked in culture fluids were slightly protected from its direct action, as when placed, for example, in the pocket of a coat hanging in the room.

The conditions in the above experiments are essentially different from those obtaining in the present investigations. In these a vacuum is first produced, thus absolutely insuring penetration of the gas and its full action upon every part of the materials to be disinfected, and then the gas in 100 per cent. in volume is introduced under high pressure.

Considering the results previously obtained in biological experiments with SO_2, at first thought it would seem probable that even better results might have been predicted under these conditions than were obtained.

In all the tests about to be described, the gas as used was derived from the liquid anhydrous sulphurous acid. The experiments were primarily undertaken to determine the practicability and efficiency of the "vacuum process" for the disinfection of rags in bale, and they will be divided into two classes, viz.:

1st. Those made in the Carnegie Laboratory in which infected rags were exposed to the gas in much less than 100 volume per cent. and without pressure.

2d. Those made at the Polhemus Chemical Company's Works, in which rags similarly treated were introduced into the centre of a tightly packed bale of rags and the bale then subjected to the process, as described in detail below.

The action upon different microorganisms was tested by exposing to the gas rags which, after

sterilization, had been soaked in cultures of the various germs. After exposure, culture tubes were inoculated with these rags. Control cultures were also made in each case by inoculating similar tubes from the same rags after infection, and previous to exposure to the gas. Some of the tests were made from the infected rags which had been exposed in a moist condition to the gas, and others after they had been dried at a low temperature. Tubes of sterilized beef peptone gelatine were, for the most part, used for the inoculations.

The cultures were made in two ways: the so-called "rag cultures" by simply introducing after exposure a small piece of the previously infected rags into a tube of prepared gelatine; and the "puncture cultures" by first soaking these rags in sterilized distilled water, and then inoculating gelatine tubes with a minute drop of this water by means of a platinum wire.

In the following experiments the mere presence of bacterial growth in cultures made after exposure is not to be considered of so much importance, unless this growth proved to be due to the development of the microörganisms that were exposed to the action of the gas; for in the methods used it was impossible absolutely to exclude all foreign microörganisms, and the cultures made after exposure were used rather as provisional tests in which the proof of the destruction of the organism exposed was complete, if no growth of any kind occurred.

The result was the more satisfactory if this was accomplished when impure cultures were used. But, on the other hand, if developments of any kind did occur, plate cultures were made and all germs present were isolated, and thus it was determined whether the cultured germs or the impurities were the source of the bacterial growth. The cultures after exposure were made in the open air of the laboratory, by transferring the rags to the culture tubes. In cases where moist rags were exposed, it was found necessary to neutralize with carbonate of soda the acidity produced by the SO_2 in solution on the moist rags, or the culture fluids were rendered acid by this and were thus made unfit for use as culture media. Owing to this fact, and because fluids are rendered antiseptic by the solution of the gas in them in small quantity, the method used in these experiments seemed to be the most practicable one, although it is open to objections in some respects.

The first series of experiments, namely, those made in the Carnegie Laboratory, were designed to determine the efficiency of the gas as a disinfectant when used in a large volume per cent.

The second series—*i. e.*, those made with the bales of rags—must show both the penetrating power of the gas and its disinfecting value when present in a pure atmosphere under pressure.

In the first series of experiments the rags were exposed to the gas in a three gallon glass jar which could be rendered air-tight. The rags were suspended in this jar, and then the liquid SO_2 was either thrown directly into it from a siphon, or was drawn into a graduate which was then placed in the jar. It was always the design to use as large an amount of the SO_2 as possible. The amount varied in the different experiments, from half a fluid-ounce to two and a quarter fluid-ounces. In some instances the liquid SO_2 had not entirely volatilized at the end of the exposure.

In the experiments first made, no especial care was taken to charge the rags with pure cultures of microörganisms before exposure to SO_2, or to prevent the access of spore-bearing or other foreign germs. It was deemed a better proof of the disinfecting power of SO_2 to destroy the cholera spirillum, for instance, when in impure cultures with other germs present, than to destroy this germ when alone, and it was thought possible that it might destroy all forms of organisms. It was due to such impurities, probably, that colonies of spore-forming bacteria developed in some of the tubes inoculated with the rags that had been exposed to the gas.

No reference will be made to the control cultures in reporting the results of the following experiments, inasmuch as development occurred in all of nearly one hundred control cultures, with the exception of three or four wire cultures, in which non-development was probably due to the acid reaction of the gelatine.

First series of experiments made at the Carnegie Laboratory in the manner just described:

Experiment I.—Cultures of the comma-bacillus of Finkler and Prior were used. Moist rags exposed. Puncture cultures made in the manner described above. The time of exposure to the gas was twenty minutes.

Result: No development occurred in any of the cultures.

Experiment II.—Cultures of the comma-bacillus of Finkler and Prior were used. Moist rags exposed. Plate cultures were made from the water infected as above. Time of exposure twenty-five minutes.

Result: No development occurred in the plates.

Experiment III.—An impure culture of the cholera spirillum was used. Two rag cultures and two puncture cultures were made. Time of exposure was about twelve minutes. Moist rags exposed.

Result: No development of any kind in either of the puncture cultures, or in one of the rag cultures, but in the second rag culture a growth appeared which proved to be a thick spore-forming bacillus. This bacillus was used in one of the subsequent experiments, series No. 2. There was no development of the cholera spirillum in this culture.

Experiment IV.—Cultures of cholera spirillum and the comma-bacillus of Finkler and Prior were used. Moist rags exposed. Two rag cultures were made from each of the germs exposed. Time of exposure about thirty minutes.

Result: No development occurred in any of the tubes.

Experiment V.—Cultures of cholera spirillum and of a micrococcus obtained in pure culture from an erysipelatous bleb (which, for convenience, will be called streptococcus erysipelatus in the following experiments, when it is used). Time of exposure twenty-five minutes. Three rag cultures were made of each of the germs.

Result: No development in any of the tubes of either germ.

Experiment VI.—Cultures of the comma-bacillus of Finkler and Prior, and impure cultures of streptococcus erysipelatus were used. Rag cultures made. Time of exposure twenty-five minutes. Moist rags exposed.

Result: No development in any of the tubes of either germ.

Experiment VII.—Old plate cultures of a bacterium found in green pus were exposed. These plates contained many colonies of large size of this germ and also numerous colonies of air germs. Wire cultures were made, whole colonies of the germs being introduced into the culture media. Length of exposure about thirty minutes.

Result: No development in any of the cultures.

Experiment VIII.—Threads were dipped into cultures of streptococcus erysipelatus and then dried. Cultures were made upon agar-agar and in gelatine from these threads after they had been exposed. Length of the exposure about forty-five minutes.

Result: No development in any of the cultures.

Experiment IX.—Rags soaked in decomposing infusion of hay five days old, which contained many spores. Rags then exposed to the gas for forty-five minutes, and at the same time half a glass of the infusion was placed in the vessel used for the exposure.

Result: Puncture cultures made from the infusion, before exposure, showed bacterial growth after twenty-four hours; those made from the same infusion, after exposure, did not show any development until the third or fourth day. Cultures made from the rags that had been exposed did not show any development on the eighth day. This non-development in the rag cultures was apparently due to the acidifying of the gelatine by the rags introduced, as will be seen later. These cultures were not neutralized. Decomposition in the infusion exposed was arrested, although the development occurring in the cultures made from this showed that the spores were not destroyed, and the arrest of the decomposition was probably due to the presence of sulphurous acid in solution in the infusion.

In other experiments which were made with decomposing infusion of hay, development appeared in the cultures made from rags after exposure in dried condition for eighteen hours, and in moist condition for three hours, although when the cultures were not neutralized after the exposure of the rags in moist condition no development occurred.

Experiment X.—Cultures of mycoderma rosa that had been dried for more than three months on slices of potato were exposed to the action of the gas for forty-five minutes. Cultures were made after exposure on agar agar and on potato.

Result: Development occurred in all the cultures on the second day, showing that these germs were not destroyed by the gas.

Experiment XI.—Cultures of staphylococcus pyogenes aureus on agar-agar were exposed for forty-five minutes, and then other tubes were inoculated from these cultures.

Result: No development occurred.

The method of exposure of the rags in the second series of experiments was as follows: the infected rags, either moist or after being previously dried, were introduced at the laboratory into sterilized glass tubes which were open at both ends. These tubes were then plugged with sterilized cotton and the ends covered outside by filter paper. In this condition they were taken to the Pollock Chemical Company's Works, where the experiments were made. The following method was employed to show the penetrating power of the gas. A sharp-pointed hollow drill, with a tight screw-cap on one end, and perforated by a dozen or more small holes, just at its middle, was driven into the centre of a bale of rags. Then the glass tubes containing the infected rags were introduced into its lumen, and the cap was set in white lead to insure its being air-tight. Now the only manner for the gas to enter the interior of the tube was for it to pass to the centre of the bale and enter by the perforations in the tube situated there. Aside from the *a priori* reasoning which would indicate that the gas must penetrate every pore of the material after the production of a vacuum, it seemed certain that if the gas reached the centre of the bale, entered the interior of the drill, and then passed through the cotton plugs to the infected rags in the tubes, that it must reach every part of the bale. After the drill had been thus introduced, filled with tubes and closed, the bale of rags was placed in an air-tight cylinder, a vacuum of 28 or 30 inches was produced and the gas was then introduced in pure form under pressure. The amount of vacuum, the pressure, and the duration of the exposure are noted in each of the experiments, and all were conducted in the same manner. After the exposure, the tubes containing the rags were returned to the laboratory without removal of the cotton plugs, and cultures were made from them, as described above.

Second series of experiments made at the Pollock Chemical Company's Works:

Experiment I.—Vacuum, 29 inches; pressure of gas, 35 pounds; exposure, 25 minutes. No spore-forming germs used. Cholera bacillus, streptococcus erysipelatus, and two tubes containing vaccine points exposed. Cultures neutralized after exposure. A number of inoculations were made from each of the kinds of germs exposed. Two tubes inoculated with the vaccine points exposed.

Result: No development occurred in any of the cultures. (The vaccine points were exposed with intention of using later for vaccination, and the culture tubes were inoculated with them simply as an experiment. A micrococcus in pure culture, however, did develop from quills not exposed and nothing developed after exposure.)

Experiment II.—Pollock Chemical Co. Works. Vacuum, 29 inches; pressure, 20 pounds; exposure, 20 minutes. After this pressure was reached, impure cultures, cholera spirillum, bacillus subtilis (spores) and spore-forming bacillus found in Exp. III., first series, were exposed. Puncture cultures and rag cultures were made of each. One-half the cultures were neutralized by a solution of carbonate of soda after the introduction of the rags.

Result: Bacillus subtilis. Development occurred in all the tubes on second or third day. Cholera spirillum. No development occurred in either of the

two puncture cultures. In three out of six rag cultures, development took place on the second or third day, but even on the ninth no liquefaction of the gelatine had taken place, showing absolutely that the growth was not due to the cholera spirillum, as this liquefies gelatine by its growth.

Microscopical examination, moreover, showed that the growth in all three of the tubes was due to a large rod bacillus.

Spore-forming bacillus (third germ exposed). No growth appeared in the puncture cultures, but development occurred on second or third day in all the rag cultures which had been neutralized. In those remaining acid no development took place.

Experiment III.—The first public experiment was made on August 26, 1885, in the presence of Dr. J. S. Billings, of the U. S. Army; Dr. W. M. Smith, Health Officer of the Port of New York; Dr. Janeway, and Prof. Chandler; Dr. Taylor, of the New York Board of Health; Dr. Raymond, Health Commissioner of Brooklyn; two representatives of the Boston Board of Health, and numerous others. The bale of rags used was a large one, but had been used in previous experiments, and was not very tightly packed. Seven tubes were employed which contained rags infected with the following germs: two prepared from cultures of the cholera spirillum, rags moist in both; one containing rags soaked in a decomposing infusion of hay, and then dried; two prepared from cultures of streptococcus erysipelatus, in one of which the rags were dry and in one moist; two from cultures of the staphylococcus pyogenes aureus, in one of which the rags were dry, and in the other moist, and one from bacillus subtilis without spores, rags dry. The vacuum obtained was twenty-nine inches, pressure of gas twenty-five pounds, and the time of exposure thirty minutes. A number of control cultures were made from each of the germs employed, with the exception of bacillus subtilis, and in each case abundant development after twenty-four to seventy-two hours followed.

Cultures made from rags exposed to SO_2 and results:

Four tubes were inoculated with rags containing the cholera spirillum and one puncture culture on agar-agar and one in gelatine were also made from these rags. Two cultures from dried rags containing staphylococcus pyogenes aureus and two from moist rags, and one puncture culture on agar-agar, and one in gelatine were made. The same cultures were made as of the previous germs from rags containing the streptococcus of erysipelas. Two cultures were also made from dried rags containing bacillus subtilis (no spores), thus making in all twenty cultures prepared from rags exposed.

No growth appeared in any of the tubes, with the exception of two tubes of the staphylococcus pyogenes aureus, in each of which after the lapse of six or seven days, half a dozen or more small colonies appeared which were transferred to other culture media, and which proved to be identical (so far as could be determined) with the germs exposed.

This is the first failure to destroy a micrococcus or bacillus (not forming spores) which has occurred in the numerous experiments.

The same germ under the same conditions was used in several experiments following, and no development occurred. In this experiment the development that appeared was very late; the colonies were few in number and of small size.

As the bale of rags used in this experiment was not very tightly packed, and there might be some question raised as to the sufficiency of the proof of the penetration of the gas, several more experiments were made in which bales especially prepared for the purpose were employed.

Experiment IV.—On September 25th, an experiment was made at the Pollock Chemical Co. Works, in which a bale of Chinese rags was used. This was very tightly packed but was of small size. Drs. W. M. Smith, Health Officer, and G. M. Sternberg, of the U. S. Army; Dr. Taylor, of the New York Health Board, and others were present. Cultures of the cholera spirillum on moist rags, the streptococcus of erysipelas on both moist and dry rags, staphylococcus pyogenes aureus on both moist and dry rags, and vaccine points were exposed. The vaccine points were furnished by Dr. Taylor, of the New York Health Board, and were returned to him after the exposure, to be tested by vaccination. The rags were prepared in the same manner as in the previous experiments, and cultures were made after the method previously described.

Conditions of the experiment: Vacuum 29 inches; pressure, 28 pounds; time of exposure (after the above pressure was obtained), 30 minutes.

The usual controls were made and development occurred in all on the second or third day. Inoculations were made from rags after exposure as follows: Four tubes from cholera spirillum by puncture, two tubes from streptococcus erysipelatus on dried rags, and the same from moist rags, and the same inoculations were made from the moist and dry rags containing the staphylococcus pyogenes aureus.

Result: No development occurred in any of the tubes. Dr. Taylor reported that no results were obtained from the vaccinations made with the vaccine points exposed in this and previous experiments. Successful vaccinations were obtained in each case from similar points that had not been exposed.

In order to show that the non-development in the rag cultures was not due to the presence of SO_2 introduced with the rags (as was suggested), when after the lapse of fourteen days, and no development had taken place in two rag cultures of erysipelas, and two of staphylococcus pyogenes aureus, they were inoculated from the corresponding control cultures. Marked growth was apparent after forty-eight hours. This was also done in two cases with cholera tubes in previous experiments, with the same results.

A number of other experiments were made at the Pollock Chemical Co. Works, and at the Carnegie Laboratory in the same manner, and the same general results were obtained.

As will be seen by reviewing the results obtained in the previously detailed experiments, the sulphur

dioxide has never failed to destroy the organisms exposed in these investigations, with the exception of spores of different forms of bacilli, of mycoderma rosa (when dried for months on potato), and on one occasion apparently the staphylococcus pyogenes aureus. There seems to be no question that it will not ordinarily destroy spores. The reason why it did not destroy mycoderma rosa, is probably because the gas could not penetrate the very dry hard potato. There seems to be no satisfactory explanation for the appearance of the staphylococcus pyogenes aureus on one occasion, excepting that the organism was not killed by the exposure. Under the same conditions in many other experiments, it was destroyed.

It will be noticed that the cholera spirillum was used as one of the organisms exposed in most of the experiments, and that the rags were more often in a moist than in a dry condition. There seemed to be an immediate danger, at the time the experiments were made, of the introduction of cholera by rags, and it was deemed of the greatest importance to determine the action of the gas on this organism. An interesting point came up in this connection. The cholera spirillum is destroyed by drying or by acids, so that if the rags are thoroughly dry, there is little danger certainly from the usual forms of the cholera spirillum, and if moist they are rendered acid, so that this would prevent the development if it did not destroy the germs.

In reviewing the results obtained in these experiments, the following conclusions seem to be justified.

1. Sulphurous acid gas in 100 volume per cent. under pressure, with an exposure of thirty minutes will ordinarily destroy most forms of microörganisms, either in dry or moist condition, with the exception of the spores of bacilli.

2. It will not destroy the permanent spores under any conditions, but retards their growth.

3. When used by the vacuum process, access to every part of the material to be disinfected is insured.

I wish to acknowledge my indebtedness to Dr. Frank Grauer, of the Carnegie Laboratory, for valuable assistance rendered in the conduct of these experiments.

A CASE OF COMPOUND, COMMINUTED, DEPRESSED FRACTURE OF THE SKULL;

EXTENSIVE LACERATION OF THE PERICRANIUM; WITH REPRODUCTION OF BONE.

BY JAMES STRATTON CARPENTER, A.M., M.D., OF POTTSVILLE, PENNSYLVANIA.

THE studies of Dr. William Macewen, of Glasgow, on "the osteogenic factors in the development and repair of bone," to which THE MEDICAL NEWS has recently called attention, are such as will readily excite clinical observation on the part of every one desirous of ascertaining, as far as may be possible, the truth or falsity of the results there attained.

And it is to be deemed worthy of congratulation, that the application of such crucial tests to this new theory, as clinical observations afford, are comparatively easy, and within the reach of the every-day practitioner—not restricted to the limits of the physiological laboratory.

It is, then, in this spirit, that I venture to present the history of the following case of a compound, comminuted, depressed fracture of the skull, desirous only of furnishing a single instance where there is satisfactory evidence of the reproduction of bone, independent of any periosteal contribution to that end.

CASE.—Charley F., aged eleven years, while in a fight with another boy, was struck on the head with the pointed edge of a half-brick thrown at him while his head was pressed to the ground, and permitting no rebound from the blow. Hemorrhage was very free, but there was only momentary loss of consciousness, and a half hour later the boy was brought to my office by his mother, having walked nearly three-quarters of a mile from his home. Examination showed an ugly, gaping wound over the right parietal eminence, into which the finger could be readily passed, detecting a depressed fracture at the seat of injury, there being a cone-shaped depression, the open, or convex surface being internal.

The next day, the patient under chloroform, assisted by Dr. John T. Carpenter, I dissected up the flap over the wound; the probe could be passed nearly one-half an inch below the external surface of the skull before it was arrested at the apex of the cone formed by the four depressed portions of bone, and as it was impossible to release the fragments, trephining was determined upon.

When the teeth of the trephine had nearly penetrated the vitreous table, the upper edge of one of the fragments was loosened by it, and I was enabled, with slight effort, to draw it free from the remaining ones; and, this vantage gained, all the fragments were detached without completing the trephining through the sound portion of bone.

The finger could now be passed through the perforation made by the missile, and the dura mater readily felt, as well as the pulsating of the cerebral vessels, so that there was nothing left behind as an irritating point, nor was there any doubt as to the entire removal of the bone at the seat of fracture.

The case pursued a very satisfactory course after the operation, temperature being normal, and the only suspicious symptoms, which prevailed for the first thirty-six hours, were overcome by free use of the mild chloride, bromide of potassium, and slight doses of morphia as required. The only dressing employed after suturing the flap was a cloth kept constantly wet with alcohol and water, and union occurred by "first intention" over the entire wound excepting at the seat of one suture which suppurated slightly, but gave no trouble.

REMARKS.—It was found, after removing the depressed fragments, that quite an extensive laceration of the pericranium had been effected by the blow, and that not enough was obtained to cover over the external table for an extent of nearly a square inch of surface, including the opening left by the depressed fragments. Then, too, the trephine had itself produced a circular fracture of the skull, and, as the diploë had been cut through, it was feared that the severing of the blood supply from this

area might greatly increase the danger of necrosis, which, in accordance with the long-taught theory, might well be feared from such a loss of the pericranium, as before stated.

No such result, however, occurred, and at the last meeting of the Schuylkill County Medical Society, I presented the subject of this paper, that the members might see indubitable evidence of genuine bone production effected under such unfavorable conditions, and as contrary to all the previously entertained ideas on this subject. It was six months from the date of the boy's injury, and there was no doubt, on examination by the different members present, of the reproduction of bone in this case, the seat of fracture being firm, and in no wise different from other parts of the cranial surface, except as shown by the clean line of cicatricial tissue marking the flap that had been dissected at the time of the operation.

In order to give greater weight to the evidence here brought forward in favor of the general proposition regarding the osteogenic function of the periosteum in the development of bone, viz., "that the periosteum does not generate bone," let me state in conclusion, that at the time of the operation I had no knowledge of the recent publication of Dr. Macewen on the subject of bone reproduction; and that it was only after reading the editorial mention of the results arrived at by him in his investigations on this subject, that this case offered itself to my mind as affording unbiassed testimony in support of the new theory so recently proclaimed by him.

PHONATORY PNEUMATIC DISTENTION OR HERNIA OF THE LARYNGEAL SAC.

A CLINICAL NOTE.

By J. SOLIS COHEN, M.D.,
OF PHILADELPHIA.

A case of stenosis of the larynx following evulsion of morbid growths after splitting the larynx externally came under my care a little more than a year ago. The stenosis was due to cicatricial adhesions, and to recurrences of growth about different portions of the glottis, chiefly in the posterior and interarytenoidal portion. By intralaryngeal procedures, including incision, evulsion, chemical and electric cauterization, and careful forcible distention, the most of it at the hands of my colleague, Professor A. W. Watson, of the Polyclinic, continued for a year or thereabouts, the stenosis has been wholly overcome. During a considerable portion of this period phonation took place by use of the ventricular bands only, and good phonation it was, too.

Within a few months the following unique phenomenon has been observed: In phonation the vocal bands become approximated naturally, but, if the phonatory effect be continued, the two ventricular bands are forced together in close apposition, and in further continuance of the phonatory effect the sac of Hilton on the left side suddenly bulges forward with an audible jerk into the interior of the larynx as if shot out from an air gun, presenting much such a picture as though the horn of the hyoid bone had just undergone dislocation; and in another second the right sac is thrust forward in a similar manner, but to a less extent. The sac in the left side looks like a small globular tumor the size of a small cherry, of much paler aspect than the remainder of the larynx by reason of distention of the mucous membrane.

HOSPITAL NOTES.

TREATMENT OF TYPHOID FEVER IN THE HOSPITALS OF NEW YORK, BOSTON, AND MONTREAL.

NEW YORK HOSPITAL.[1]

During the early part of this summer the routine treatment of typhoid fever in Dr. Peabody's wards, if the patient entered during the first ten days of the disease, was a calomel purge immediately followed by naphthaline in doses of ten grains every three hours. The first seven cases died (two having entered the hospital moribund), one of septic infection, one of acute mania, and the three others simply from the intensity of the poisoning, the lesion being very extensive.

Since August 14th we have had but one death in twenty-one cases—two of these are still sick, but doing well—of this number, thirteen have had absolutely no treatment *directed to the intestines*, eight have had naphthaline, and among these the one death occurred.

When the temperature rises high enough to make the daily average about 103°, antifebrin is given, either in large doses at long intervals, or in continuous doses of two grains every two hours during the day, and three grains every three hours during the night. Some patients have had two grains every hour during the day. In no case was any bad result noticed; on the contrary, the patients were quieter, slept better, and temperature, pulse, and general condition were much improved.

Whiskey is given when pulse, tongue, and condition indicate the need of stimulation, the amount varying from three to eight ounces during the twenty-four hours. Fluid extract of digitalis is added occasionally in small doses.

When there is insomnia, it is almost always relieved by morphine, generally given hypodermatically, as so many of the patients have a greater or less tendency to vomiting. In a few cases the bromides, or urethan have been tried, but not with such good results as morphine. In cases of delirium with great restlessness, hyoscin hydrobromate, given hypodermatically in doses of one-hundredth of a grain, has been tried with very good effect. It has been followed by several hours of quiet sleep.

Diet is of milk, patients taking generally from four to five pints daily. If the stomach is at all irritable, milk with lime-water, or peptonized milk is given. Some patients take beef tea well, and have from one to two pints of this daily in addition to the milk.

In a few cases nourishment by the rectum has been tried for short times, with the effect of relieving an irritable stomach. Laxative enemata are given every other day if patients have no movements from the bowels; and in almost all of our cases this has been necessary,

[1] Reported by Dr. George A. Richards, House Physician.

as patients have been generally constipated, diarrhœa being the exception rather than the rule, during the summer just passed.

Counting three cases not already entered in this report, as they were not here during Dr. Peabody's service, there have been thirty-one cases treated here since last April with eight deaths, a mortality per cent. of almost 26. This very high rate is to be explained partly by the fact that several patients entered late in the disease, and in very bad condition.

St. Luke's Hospital.

In Dr. Francis Kinnicutt's wards the treatment is essentially general and symptomatic. During the past several years, when it has been possible to establish the date of the beginning of the disease, occasionally one or more moderately large doses of calomel have been given in the first days of the fever, but never with the result of *aborting* the disease. So many factors are involved, that it is difficult to give a trustworthy opinion in regard to the alleged power of calomel given at the inception of the disease, *at least* to influence favorably its subsequent *course*. Naphthaline given in frequently repeated doses, to the amount of sixty grains daily, has also failed in any abortive effect.

Rest, quiet, fresh air, and a very carefully regulated diet of mixed liquid food constitute the general treatment. Increased fever and intestinal irritation frequently have been observed to follow the ingestion of large quantities of raw milk, and in such cases a reduced amount of peptonized milk has been given.

The symptomatic treatment may be summarized as follows: Urethan is considered by far the safest and most efficient hypnotic. Its not sufficiently well recognized antipyretic properties increase its value. It is given in doses of thirty to forty grains, repeated in an hour or two, if necessary, to relieve insomnia. Believing that excessive diarrhœa has its source often in the presence of undigested food in and catarrhal inflammation of the bowel in addition to the specific lesion, the stools are carefully examined in such cases. The presence of curds demands a more careful regulation of the diet. A combination of naphthaline and bismuth has been found efficient in controlling the catarrhal inflammation and in correcting fetor.

Recognizing the fact that paralysis of the bowel and thereby ultimate constipation may proceed from a *deep* ulceration, laxatives are not given after the first week or ten days. Small enemata every other day are used to relieve constipation. Since the discovery of the new group of antipyretics, they have been employed, almost to exclusion of baths in any form, to control what is believed to constitute harmful autumnous pyrexia.

The general rule adopted is to give antipyretics only when the temperature reaches 103°. Kairin, hydrobromate, thallin, antipyrin, and antifebrin have been successively used and their effects very carefully observed. As the result, antifebrin is at present almost exclusively employed. Very exceptionally have any of these failed to relieve.

In combating heart failure, alcohol is chiefly relied upon. Where heart weakness proceeds from degeneration of muscle fibre, a minimum effect may be expected from any method of treatment; if failure is owing more to impaired nerve force or influence, which is more often the case, the use of alcohol gives the happiest results. Alcohol is rarely given in the early stages of the disease, very commonly in the third and fourth week. Many cases are treated throughout, without its employment. Its use is restricted to combat *special* symptoms. Sir William Jenner's rule is largely the guide in its administration. "When in doubt in an individual case of typhoid fever, abstain from giving it; where there is a question of the larger or smaller dose, prescribe the latter."

Dr. Beverley Robinson's general treatment of typhoid fever is expectant; he does not believe that there is any known specific for this fever and is very doubtful as to the power of any drug, in use at the present time, to abort this disease. His treatment naturally depends upon the stage of the malady at the time it comes under his care, and whether it has a tolerably mild course without complications, or whether the disease from the beginning is marked by more than ordinary severity and is accompanied by manifest departures from what is usual, and the complications indicate special severity of the attack, or march of the affection.

The cases of typhoid fever which he has treated during several years past, have been, as a rule, of moderate severity. Diarrhœa has not been very frequent, temperature rarely going beyond 104° at any time, and then only during brief periods, heart complications have been occasional, pneumonia rare, and nervous symptoms showing either ataxia, or great adynamia, in relatively few instances; he recalls not more than three or four cases of intestinal hemorrhage.

In the incipient stage of typhoid fever a mild saline cathartic preceded by one or two grains of calomel, or double that quantity of blue mass, is prescribed. Later, and so long as the development of typhoid fever appears doubtful, small doses of aconite, ammonia, and spirit of Mindererus, or neutral mixture, are the means he employs to subdue febrile excitement. If fever still continues, with marked elevation of temperature in the afternoon, after a few days, and other symptoms point more surely toward the typhoid state, these agents are abandoned for tonic doses of quinine, milk diet, which is insisted upon, and occasional tepid sponging of the trunk and limbs with lukewarm water and vinegar. Complications are treated as they arise, bronchitis, or pneumonia with tincture of iodine, turpentine stupes, or Corson's paint, to the chest walls; chloride of ammonium, moderate doses of digitalis, and moderate stimulation with whiskey internally. If the heart becomes irregular or notably weak and frequent, or a blowing murmur shows itself at the apex, he now orders tincture of strophanthus in five-drop doses every six hours, besides using mustard poultices or dry cups to the chest, and beginning, continuing, or increasing the alcoholic stimulant. Nervous derangements are influenced favorably by ether in the form of perles, by musk, or by a mixture of lavender, chloroform, ammonia, and camphor. Hemorrhage is controlled with turpentine and opium. High temperature is controlled by antifebrin in five grain doses, repeated two, or more times, in the twenty-four hours, or whenever the body temperature goes beyond 103 Fah. in the axilla.

The diet is usually limited to milk during the duration of the fever. This is given to the patient every two

hours, as much as he will drink; nausea, or disgust for food, being to some extent relieved by the addition to the milk of lime water, Vichy, or Vals water, or by the alcoholic stimulant administered at the time. If nausea persists and the patient becomes very weak and prostrate, dry champagne is given frequently in small doses. Occasionally, *black coffee* has worked wonders in bringing back to life patients who appeared almost moribund. Solid food, as a rule, is not allowed until all febrile reaction has been absent at least one to two weeks. When begun, he is now using with favorable results what is known as albumenoid food, which seems to be tolerated by the stomach and bowels more readily than beef peptonoids, or other preparations of a somewhat similar character. At a later period, if the albumenoid food and the beef peptonoids have been well supported, and, especially, if no recurrence of the fever take place, farinaceous food is permitted and a small quantity of the light meats once a day.

In very few patients has he found the necessity at any time to treat their febrile condition by means of *systematic cold bathing*, and he regards this treatment as ill-adapted to the large majority of typhoid fever cases met with in New York City, either in hospital, or private practice. Whenever hypostasis of the lungs involves these organs in a considerable degree, he believes frequent inhalations of oxygen gas to be a measure of great practical utility in giving to patients some additional chances of preserving life otherwise imminently imperilled.

The Massachusetts General Hospital.

The plan of treatment of typhoid fever carried out in Dr. Frederick C. Shattuck's wards has again become chiefly a symptomatic one. This summer he tried in six or eight cases the administration of naphthaline, eighty grains a day in divided doses, ten grains of calomel being given immediately on admission to the ward. It has been claimed by some that early cases may sometimes be aborted in this way. One patient thus treated, presenting the important early symptoms, recovered in three or four days; and so did another who received no medicine whatever.

Among the points in connection with typhoid fever in regard to which we are still very ignorant is the question of fact. Does the disease ever abort spontaneously, or in consequence of treatment? Dr. Shattuck gave up the naphthaline treatment because he could not see that in cases in which it received a thorough trial it was productive of any good result, while in two cases it caused strangury, in one other hæmaturia.

This year he has also discontinued the systematic use of internal antipyretics, ordering them only when the temperature is very high and the patient very restless, or, in his judgment, suffering in some other way directly from the effects of the temperature. These indications are seldom present.

Diet. Six ounces of milk are given every two hours. If this is not well borne lime water is added, or the milk is peptonized; or, if there is no diarrhœa, animal broths are allowed. When the evening temperature reaches the normal point, patients who have been on an exclusive milk diet are given broths, then raw eggs, then light farinaceous articles, and meat is permitted toward or at the end of the first week of convalescence. Stimulants are given in such quantities as the pulse, the tongue, and the nervous symptoms may seem to demand.

In cases characterized by constipation, a large percentage the past two years, a plain water enema is given every second day. For sleeplessness and diarrhœa opium is the main reliance. In intestinal hemorrhage opium is given in sufficient quantity to narcotize the patient, stimulants are used according to the pulse, and ergotine is injected under the skin. To moderate the temperature, stimulate the nervous centres, and promote the comfort of the patient he is sponged with water at a temperature of 60°–75°, every two hours if the temperature is 103° or more; every three, four, or six hours according to circumstances if it be below that figure. Sometimes alcohol, or alcohol and water, is substituted for the plain water baths once or twice a day.

It will be seen by the above that the aim in treatment is simply to conduct the patient to recovery, safely and as speedily as is compatible with safety. A certain percentage of patients receive neither drugs nor stimulants, a certain proportion stimulants only, and a certain proportion both drugs and stimulants.

Dr. R. H. Fitz during the past summer made a few attempts in his ward to test the asserted value of naphthaline in checking or overcoming the progress of typhoid fever. The remedy was used in three grain doses, every two hours during the first week of the fever. There was no evidence that any benefit resulted.

Although given in capsules, nauseating eructations were, at times, complained of, and the size of the capsule was inconvenient. The disadvantages being conspicuous, without any evident corresponding gain, the use of the naphthaline was soon discontinued.

Of the newly discovered antipyretic drugs, antifebrin was the one usually employed when there were special indications for their use. The artificial maintenance of a low range of temperature throughout the course of the disease was not deemed important. If an elevation of 105° F. was reached, a sufficient quantity of antifebrin was given to lower the temperature four or five degrees. The production of chilly sensations was considered undesirable. A single dose of five grains often sufficed. If necessary, this dose was repeated at intervals of an hour until fifteen grains were taken. Doses of three grains were found of great benefit in relieving the headache so frequently occurring in typhoid fever. There was no necessarily simultaneous falling of the temperature.

The routine treatment of all cases consisted in a carefully regulated diet and the use of cold sponge-baths every two hours. The diet was chiefly milk, as nearly four ounces every two hours as possible. If the milk was not well borne, it was pancreatized or mixed with lime-water. The use of the exclusively milk diet was maintained until the temperature remained normal for at least a week. Beef tea, strained soups, and broth were then added, and, in the course of three or four days, soft puddings, eggs, and bread.

In the third week of normal temperature there was no restriction as to diet, with the exception that the most nourishing and easiest digested foods were ordered.

Wine or brandy was given after the first week whenever a weak pulse or excessive nervous debility was present.

Dover's powder or morphine, urethan, and chloral

were used as hypnotics, the former, where sleeplessness was accompanied with pain, the latter, where pain was absent.

Constipation was a frequent symptom, and was invariably relieved by enemata as often as once in three days. In one case, irrigation of the colon, twice daily, became necessary. During convalescence a change of diet was often an efficient means of insuring a normal evacuation.

Profuse diarrhœa was controlled by liquid preparations of opium, and intestinal hemorrhage was checked by ten minims of laudanum every two hours.

The Montreal General Hospital.

The cases of typhoid fever treated in Dr. George Ross's ward include a larger proportion of severe and very severe than perhaps elsewhere—the reason being that, owing to the great prevalence of the disease in Montreal at certain seasons, and to the limited accommodation, it is a necessity to refuse a considerable number and receive only those most urgently requiring care. If we come, therefore, to look at the mortality, this important fact must be borne in mind. Here, any method of treatment which will give results approaching the average in other places, must deserve confidence, seeing that we deal with carefully selected bad cases.

The treatment is based upon what might be called an "intelligent expectancy." The diet is composed exclusively of milk and rice water. The amount of milk consumed daily is not considered immaterial. It is not deemed prudent to allow, as is often elsewhere done, milk *ad libitum*. On the contrary, the daily quantity is strictly limited, in the case of adults, to three pints *per diem*. This amount is found sufficient to meet the wants of the economy, whilst the ingestion of more leads to the danger of accumulation of feces and aggravation of symptoms. The milk is frequently diluted with rice water, or, if thought well, with lime water. When the stomach is weak, benefit is obtained by artificial digestion of the milk, but the great majority drink pure milk and appear to assimilate it without difficulty. It is a rule to nurses to supply cold fresh water or ice water to typhoid patients freely, and, during the height of the fever, pellets of ice to suck. When a patient is delirious or unable to make known his wants, he is still to have cold water given him frequently and freely. It is believed that strict attention to this apparently simple item is really a matter of considerable importance. It is a fixed rule to allow no change from a milk diet until the patient's temperature has been normal both night and morning for at least eight consecutive days. During the early stages, and until a material fall in the temperature has taken place, cold sponging of the entire body is carried out every three or four hours, as the case may require: and constant cold is applied to the head by means of a coil through which ice water flows. These measures are relaxed as the temperature falls and the symptoms improve.

In mild cases, or even in those of moderate severity but running a course approaching to the type, alcoholic stimulants are not given, except in small quantities during the later stages; but in all those showing a higher grade of fever, as marked by an elevated temperature and signs of vital depression, whiskey and brandy are employed in amounts varying with the special indications of the case. When the prostration is marked, and the nervous symptoms severe, stimulants are given freely.

As regards medicines, a favorite prescription is one containing gtt. ij each of acid. carbolic. pur. and tinct. iodin., well diluted in water every two hours. It is a rare occurrence to meet with discolored urine from this remedy. No striking results follow its administration. In the later stages, quinine in tonic doses, with or without digitalis, is given. When a case is seen sufficiently early, a full purgative dose of calomel is found to be useful in unloading the *prime vie* and preparing for the siege. We find a large proportion of our patients constipated rather than suffering from diarrhœa. The bowels are never allowed to remain quiescent for more than three days at most. More generally two days only are allowed between evacuations, which, if necessary, are obtained by means of enemata. These are greatly preferred to laxative medicines. In approaching convalescence, great caution is exercised in administering a purgative, since rapid elevation would seem sometimes to follow directly after even a dose of castor oil. The presence of prominent symptoms often leads to the medicinal treatment being, for the time, entirely directed toward counteracting them. For instance, if there be marked gastric irritability, bismuth, bicarbonate of soda, and such like drugs, with effervescents, are given. If the case be especially marked by bronchitis and pulmonary congestion, turpentine in emulsion is relied upon. If tympanites be considerable charcoal is found very useful, sometimes turpentine, together with limitation of the food for a time, and attention to the bowels. If muscular tremor, delirium, and insomnia are a marked feature, such remedies as camphor, valerian, and ammonia are given at frequent intervals. Of the complications, hemorrhage is treated by ice, gallic acid, digitalis, or lead and opium, and the external application of an ice-bag. In peritonitis (without perforation) opium is given in moderate doses, and without any bad effects. When perforation is known to have occurred, hypodermatic injection of morphia and hot applications.

The use of quinine in antipyretic doses, during the active stages of fever, has been entirely abandoned. In some of those unaccountable "excursions" of the temperature which we are apt to witness during commencing convalescence, full doses of quinine are used with very good effect. Of other antipyretics, antifebrin has had a moderate trial in this disease, by some members of the staff. The conclusion arrived at seems to be that the sudden depressions of temperature produced by the drug do not in any way modify the course of the fever, which only subsides at the same time as if this had not been employed. In some cases, decided antipyretic action could not be obtained from it. In others, its ill effects, cyanosis and cardiac depression, were witnessed, but not to an alarming degree.

MEDICAL PROGRESS.

The Bacillus of Cancer.—At the meeting of the Medical Society of Berlin, on November 27th, Dr. Scheuerlen, assistant in the Medical Hospital of Professor Leyden, spoke on the etiology of cancer. He had made experiments with about forty specimens of

cancer of the breast; from every specimen he inoculated twenty culture tubes. Of these 800 inoculations, 400 had been fruitful. He obtained the cancer juice aseptically, and cultivated from it a micr°örganism, which proved to be a spore-forming bacillus. Cultivations were made upon exudation taken by puncture from a case of pleurisy with effusion, put in the sterilizer for five days; and coagulated on the sixth day; cultivations made upon blood-serum, agar-agar, peptone, gelatine, or potato were equally successful. The growth was very luxuriant, taking place in the following manner: The bacilli were first found in the growth; then in from twelve to twenty-four hours spores made their appearance, and covered the entire surface. In microscopical preparations of the cancer-juice itself the same spores were found often in much smaller number than the bacillus, whilst it has never yet been seen in sections. The microbe forms upon the surface of the culture materials a thin film, which is either transparent or of a yellowish-brown. The bacillus can be stained by all the methods in use (very easily by Gram's method); the spores are stained with difficulty, and only by Professor Ehrlich's process for staining the tubercle-bacillus. Both the bacillus and its spores have spontaneous movements. The spores are to be found mostly outside the cells, rarely single, generally in clusters, as though the cells were sprinkled with them. Experiments were made on six female dogs; the cultivations were injected into the mammary gland, but no conclusive results have been obtained. A soft swelling, not distinctly circumscribed, formed at first, and then diminished; it became compact and circumscribed, showing under the microscope a decidedly epithelial character, much related to cancroid. This bacillus Scheurlen believes to be certainly the cause of cancer.

In the discussion which followed, Professor A. Fränkel, one of the first bacteriologists of Germany, objected to the method by which these experiments had been conducted, saying that secondary infections might easily have taken place, such as frequently occur. Neither did the quick growth of the bacillus answer to the slow growth of cancer, as hitherto found in all clinical experience.

At the next meeting another experimenter, Dr. Schill, of Dresden, who has during the last five years been seeking for a microbe of cancer and sarcoma, will explain his results. It seems that he has discovered a bacillus resembling that described by Dr. Scheuerlen.—*British Medical Journal*, Dec. 3, 1887.

Extirpation of the Larynx.—Hahn, at a meeting of the Berlin Medical Society, on November 16, 1887, reported fifteen partial or total extirpations of the larynx. Of these patients two were living; one was operated on seven years before, and was living in good health, aged sixty-nine years. In this case the extirpation was very extensive; the specimen was typical carcinoma. The second case was operated on one and a half years previously, and was partial. It is uncertain whether there is a return in this case, or simply scar tissue which is present. Most of these patients were aged between thirty-five and sixty-nine years. Of all these only two recovered; a third is living, but has a return of the cancer. Hahn believes that carcinoma which shows a tendency to horny or warty growth has a more favorable prognosis than other carcinomata. He thinks that most operations are undertaken too late, and that in carcinomata with a malignant tendency operation is not indicated.—*Deutsche medicinische Wochenschrift*, November 24, 1887.

Antipyrin in Sea-sickness. — The Paris correspondent to the *Lancet* of November 12, 1887, writes as follows:

The Société de Biologie has devoted part of its last two sittings to the discussion of the different means recommended for the relief of sea-sickness. A note was presented by M. Hantz on the best way of administering cocaine, and received without any expression of opinion. M. Dupuy said that sea-sickness was more severely experienced by dyspeptic subjects, and particularly those who had dilatation of the stomach. In eleven cases he had given antipyrin in doses of from 30 to 45 grains for a few days before embarking, and the patients had all informed him that they had been free from sickness. M. Dastre said he had instituted a series of experiments upon animals, imitating as closely as possible the movements of "pitching" and "rolling." He had found that there was an incredible displacement of the abdominal viscera, which strike against the diaphragm and cause the gastric uneasiness. The body struggles with these displacements by means of muscular contractions, and the respiratory rhythm accommodates itself to them. Professor Brown-Séquard remarked that this theory of visceral displacement was very old, and one which he had been able to verify in his frequent passages across the Atlantic. It was evidently the view entertained by Wollaston, who recommended Arago to place a pad over his stomach when he crossed the Channel. M. Maurel had no doubt as to the influence of the stomach, but thought that cerebral shock also played a part in the determination of the symptoms, inasmuch as the sickness always occurs when the boat is going down, never when it is being lifted up. The best preventive was lying on the back. Beyond the statement that sea-sickness is associated with dilatation of the stomach, and the hope held out by M. Dupuy that in antipyrin we now possesss a remedy for it, there was nothing new in the views expressed by the different speakers. I have referred, however, at some length to the subject, because my own seafaring experience has been somewhat extensive, extending over intervals during the last fifteen years, and including some kind of trial of every new drug recommended. Until a month ago the plan I always recommended was to take bromide for some days before going on board, and, if discomfort was felt notwithstanding, the dorsal decubitus was to be adopted. This, together with champagne, is generally what the Transatlantic captains advise. In a recent trip to New York I tried two other remedies. The surgeon of the ship recommended me tincture of capsicum, and I had also taken a supply of antipyrin. As far as one case goes, the result of the antipyrin was most satisfactory, and I can to this extent endorse the experience of M. Dupuy. The capsicum was also serviceable as a palliative, for several persons who had taken it continued to ask for it, but it did not arrest the sickness like antipyrin. A fellow passenger who suffered from dilatation of the stomach with *elapotement* was not sick at all.

THE ANTISEPTIC TREATMENT OF DIPHTHERIA.—We add to the formulæ published in THE MEDICAL NEWS of December 3, 1887, the following, which are quoted from various authors by LE GENDRE, in the *Archives de Laryngologie*, No. 1, 1887:

Carbolic acid by inhalation, may be given by the use of a teaspoonful of the following mixture, added to sufficient water:

R.—Acid. carbolic.	ʒ 70.
Acid. salicylic.	ʒ 14.
Acid. benzoic.	ʒ 28.
Alcohol	ʒ 117.

The strength of the spray should be proportioned to the severity of the disease, the age of the patient, and the size of the room.

The following may be taken internally:

R.—Succi citronis	ʒ ss.
Sodii chlorid.	
Sodii sulphat.	aa ʒ 2½.
Mel.	ʒ 3¾.
Syrupi calcis	♏ 30 to 60.
Sodii carbolat.	gtt. 20 to 30.

A teaspoonful or dessertspoonful may be taken every two hours.

For local application:

R.—Aquæ calcis	ʒ 30 to 75.
Liquor. ferri chlorid.	♏ 30 to 120.
Acid. carbolic.	gr. 1/10 to 15.
Mel. rosat.	ʒ ss to ½.

Also,

R.—Sodii borat.	
Potass. chlorat.	aa gr. 75.
Acid. carbolic.	gr. 4.
Glycerin.	ʒ 2½.
Mel.	ʒ 7½.

The pharynx, and especially the tonsils, may be touched three times daily with:

R.—Tinct. krameriæ	ʒ 2½.
Tinct. benzoin	♏ 75.
Tinct. aloes	♏ 45.

After which insufflation of the following powder should be made:

R.—Tannin	gr. 25.
Sulphur. sublimat.	
Potass. chlorat.	aa gr. 30.

To irrigate the fauces of a child suffering from diphtheria it should be wrapped in a shawl or blanket, its arms by its sides to prevent struggling. It should be held upon the knees and against the breast of one person, whose hands are folded over the child's trunk in front. A napkin may be placed under the chin, and the lips closed, when the child will open its mouth. The fluid should be impelled with sufficient force to excite reflex contraction of the pharynx, when there will be little interference from the passage of fluid into the trachea and coughing.

THE CONVERSION OF BENIGN GROWTHS OF THE LARYNX INTO MALIGNANT.—At the recent Congress of German Naturalists and Physicians PROF. SCHNITZLER read a paper upon the subject of the malignant degeneration of benign growths in the larynx. He first described a case of epithelial carcinoma with secondary growths in the lymphatic glands and pleura, in a patient who some months previously had been operated on for papillomata, the recurrence of which had been treated by cauterization. The patient subsequently came under Professor Schnitzler's care with symptoms of perichondritis, but the carcinomatous nature of the disease was recognized, and the supervention of pleurisy some weeks later was considered to be due to a diffusion of the malignant disease. This diagnosis was confirmed after death, when, besides the laryngeal and pleural carcinoma, there were found necrosis of the thyroid cartilage and gangrene of the right lung. Professor Schnitzler remarked upon the rarity with which benign tumors take on malignant characters, he having seen such conversion only three times among hundreds of cases of laryngeal papillomata. He left undetermined the question whether the operations and frequent cauterizations induced the malignant disease, and said that endo-laryngeal operations upon papillomata should be discountenanced on this ground. He also spoke of the difficulty in the differential diagnosis between benign and malignant growths, as well as between laryngeal syphilis and carcinoma. Dr. Morelli related the case of a man whose larynx was so blocked by papillomatous growths as to necessitate tracheotomy prior to a thyrotomy, with complete ablation of the new growth and galvano-cauterization of the laryngeal wound. The patient left apparently cured, but wearing the tube. After the lapse of a year he returned with evident carcinomatous degeneration of the papilloma, which filled the larynx to the level of the tube, which was partially displaced and blocked by it. This was the only case of the kind that Dr. Morelli could recall within a period of nearly ten years. Dr. Seifert referred to a case published by Böhmer, where papillomata (histologically examined) had been treated by Professor Gerhardt and himself for a year, but which passed into carcinoma, for which extirpation of the larynx was practised; but the patient did not long survive the operation.—*Lancet*, November 26, 1887.

SHOULD LEPERS BE ISOLATED?—The *British Medical Journal* of November 12, 1887, in an editorial upon this subject, concludes as follows: When we consider how long the period of incubation may be, who can be sure that ten, or even twenty years hence traces of that patient may not be found in the development of a case of leprosy amongst some of the people with whom she came in contact? We are decidedly of opinion that a few more cases of leprosy are seen in London than formerly was the case, but this we attribute to the fact that travelling is more general, more usual, and less expensive, and that patients of all kinds come to London for advice in increasing numbers.

Without sounding a note of alarm, or considering that there is any occasion at present for compulsory measures in England, we are yet unable to consider the presence of lepers in England as being absolutely free from danger, and believe that the time will come when cases of leprosy in this country will share the attention

of the sanitary authorities with other diseases universally admitted to be contagious.

Strophanthus.—Hochhaus, in the clinic of Fürbringer, has made an extended investigation on the value of strophanthus, and concludes as follows:

In sixty cases he found that in valvular lesions, with compensation, tincture of strophanthus lessens, invigorates, and regulates cardiac action, relieving dyspnœa and œdema. Digitalis is generally effective in cases benefited by strophanthus, but there are cases not benefited by digitalis, which improve with strophanthus. In comparison between the action of digitalis and strophanthus, digitalis affects the heart more promptly; strophanthus relieves dyspnœa, caused by cardiac disease, more rapidly and effectively than does digitalis. The indications for the use of strophanthus are within more narrow limits than those of digitalis; we have not yet determined clearly these conditions. In degeneration of the heart-muscle, with small, frequent irregular pulse and marked dyspnœa, strophanthus is very effective in relieving dyspnœa, and improved cardiac action follows.

In acute and chronic nephritis, the tincture is less effectual than in other cases; dyspnœa is frequently relieved without the production of diuresis, or lessening the œdema.

Œdema, from cachexia, is sometimes relieved by the remedy. Disturbances of digestion are often produced, which generally subside if the drug be continued.

Regarding dosage, from three to six drops of the tincture should be given in a teaspoonful of water or wine, and when needed, syrup or licorice may be added, in the beginning of treatment, and the amount increased two drops with each dose daily until distinct effects are evident, when the dose last given should be continued; it is not advisable to go higher than from three to twenty drops. From three to five drops is sufficient for a child.

The effect generally appears in two or three days, and endures for one or two weeks, although great variations on this point are observed. A cumulative action was not observed. Strophanthus is not of great and peculiar value, but has a useful action in aiding and supplementing digitalis.—*Deutsche medicinische Wochenschrift*, October 27, 1887.

Ingluvin.—Mohr has found the following a convenient formula for administering ingluvin:

R.—Ingluvin	ʒ i.
Acid. hydrochlor.	ʒ i.
Aquæ	ʒ 7½.

of which two or three teaspoonfuls or dessertspoonfuls may be taken daily.—*Revue Générale de Clinique et de Thérapeutique*, November 24, 1887.

The Decomposition of Salol in the Animal Body.—Nencki, in the *Therapeutische Monatshefte* for November, 1887, reports the results obtained from a series of experiments with the various digestive ferments in their power to decompose salol. He found that the digestive ferments present in the pancreas, liver, and intestine, had equal effects in producing the decomposition. In the stomach the acidity of the gastric juice was a hindrance. What is remarkable, however, is the fact that muscle substance possessed, when the alkaline carbonate was added, a decomposing power equal to that of liver, pancreas, or intestine. Nencki infers that the glycerides of the common fatty acids are broken up in the various organs of the human body; he thinks that the cell elements possess this power. In support of this opinion he adduces experiments made with albuminoids outside the body, in which the effect was much less than that produced by living tissues.

From its quality of being easily decomposed by living tissue in the presence of an alkali, Nencki considers it likely to prove of value as an external antiseptic, by reason of the two efficient antiseptics which compose it.

Ligature and Excision of the Sac in Hernia.—Dr. Poland, in the *Practitioner* for November, 1887, sums up the advantages of ligation and excision as:

Immediate—

(1) In many cases it does not add in any way to the risk of operation.

(2) It shuts off the peritoneal cavity in a few hours.

(3) It prevents hemorrhage into abdomen.

(4) It prevents septic peritonitis.

More remote—

(5) It promotes tendency to radical cure.

(6) It leads to more perfect adjustment of truss and comfort of patient.

Sozoiodol.—Lassar describes, in the *Therapeutische Monatshefte* for November, 1887, this recently prepared substance, which has the formula

$$C_6H_2ISO_3H(OH).$$

It contains 42 per cent. of iodine, in combination with sulphur and carbolic acid. It is easily soluble in water and alcohol, and is not decomposed by substances used commonly as vehicles.

Lassar has used it in 5 and 10 per cent. ointments, in combination with lanoline, starch, oxide of zinc, and chalk, as an alterative and antiseptic.

Nothnagel on Cardiac Medication.—In a recent lecture on this subject, Nothnagel stated that he still preferred digitalis to more recently advised remedies, and did not prescribe convallamarin unless digitalis had proved useless.

Adonis vernalis he prescribes in the tincture, in quantities of 60 minims during the first day of treatment. On the second day the quantity may be increased to 75 or 90 minims, but more than 105 minims in twenty-four hours should not be given. Sparteine has been used in doses of $\frac{1}{30}$ of a grain, as the symptoms demand, for cases where the cardiac rhythm is greatly disordered.

Nothnagel considers caffeine much preferable. He gives it in broken doses of 3 grains, as many as five doses, at intervals indicated by the symptoms, and increases the amount used to 30 or 45 grains daily; with the French, he prefers the benzoate of caffeine. In anasarca he alternates caffeine and digitalis. To produce diuresis, Nothnagel uses calomel and opium, from 8 to 10 grains. The inconveniences of this treatment are the possibility of the calomel decomposing into the bichloride in the intestines, and mercurial poisoning. If no diuresis is produced in three or four days, its use

should be abandoned. The calomel treatment may be intermitted with advantage at any time.

Oertel's method of treatment by open air exercise, in moderate altitudes, he considers inadmissible in all cases of degenerated heart muscle.—*Revue Générale de Clinique et de Thérapeutique*, November 10, 1887.

THE TREATMENT OF PSORIASIS.—BESNIER uses

R.—Naphthol (*ß*)	1 part.
Adipis	9 parts.

The affected part is to be well rubbed with this salve before retiring, and flannel worn during the night; in the morning a bath of hot soapsuds should be taken.

If no improvement follows after five days of this treatment pyrogallic acid is used, 5 or 10 to 100. To avoid irritation friction is employed on small surfaces only, and these surfaces are changed every four days.

For extensive surfaces BESNIER employs a dressing of

R.—Acid. pyrogallic.	
Acid. salicylic.	āā gr. 90.
Ether and alcohol, q. s. to liquefy.	
Add collodion flex.	ʒ 20.

—*Revue Générale de Clinique et de Thérapeutique*, November 24, 1887.

NAPHTHOL AS AN ANTISEPTIC.—The antiseptic properties of naphthol have been known for a long time, but owing to the supposed toxicity of this substance, its employment has been till now limited to the local treatment of certain affections of the skin. At a recent meeting of the Academy of Sciences, PROFESSOR BOUCHARD stated that, after two years of research, he has been able to determine and measure the antiseptic power of naphthol as well as its toxic power, and he has been led to conclude that, in certain circumstances, it is to be preferred to all the antiseptics known, owing to its very feeble solubility. To disinfect a surface easily accessible, the soluble antiseptics suffice, and the same should be employed to effect general antisepsis, but none has as yet been found that can be introduced into the blood in sufficient quantity to destroy the vitality of the microbes without compromising the health or life of the patient. To produce antisepsis in the thickness of the tissues, or in that of cavities reached with difficulty, where continued drainage cannot be practised, the insoluble antiseptics, or those only partially soluble, can alone be employed with advantage. They should be preferred for the interstitial treatment of certain maladies of the tissues, for the antisepsis of serous cavities, and particularly for the antisepsis of the digestive tube, which the author has had especially in view in his researches. The explanation on which the advantage of an insoluble antiseptic is founded is that from the fact of its insolubility it is unabsorbable; it will therefore be found present throughout the length of the digestive tube, and can be administered in sufficient quantity to render all fermentation impossible, without having to fear its general action on the economy, into which its insolubility would prevent its penetrating. It was for these reasons that Professor Bouchard preferred the salicylate of bismuth and iodoform, and Rossbach also, when he employed naphthol for intestinal antisepsis. After having tested the antiseptic property of naphthol in certain microbian maladies, Dr. Bouchard found that in a solution of 5 grains to one quart of diluted alcohol, the naphthol very much retarded the development of the bacillus of typhoid fever, as well as the germination of the bacillus of tuberculosis. Urine, shaken up with naphthol in powder, then filtered and exposed to the air, does not ferment. According to Bouchard, the dose of naphthol which may be considered toxic for a man weighing 140 pounds is about 8 ounces. 40 grains of naphthol per day suffice to procure intestinal antisepsis; the author therefore concludes that the toxic power of this substance has been very much exaggerated, though there can be no doubt that a solution introduced into the organism directly through the veins would prove far more dangerous.—*Lancet*, November 19, 1887.

TREATMENT OF DIABETES, WITH THREATENED COMA.—STADELMANN has employed, with good results:

Acid. citric.	ʒ 2.
Sodii carbonat.	ʒ 4½.
Glycerin.	ʒ 5.
Aquæ destillat.	ʒ 37½.
Spirit. menth. piper.	gtt. 3.

To be taken two or three times during twenty-four hours.

By this combination the acids produced in the disease are neutralized, and the dangers of acetonæmia lessened.

Saccharin may be used advantageously in the following combinations:

Sodii acet.	ʒ 2½.
Aquæ carbonat.	ʒ 22½.
Saccharini	gr. 1½.
Essent. citri	♏ 40.

Which may be taken three or four times daily. Also

Sodii tartrat.	ʒ 7½
Aquæ carbonat.	ʒ 50 to 75.
Saccharini	gr. 5.
Essent. citr.	♏ 75.

To be taken several times daily, as occasion demands. —*Therapeutische Monatshefte*, November, 1887.

ANTISEPSIS OF THE BLADDER AND URETHRA.—At a recent meeting of the French Academy of Medicine, LAVAUX read an account of his method of treatment of the bladder and urethra, with the following conclusions: Continued lavage of the anterior portion of the urethra and intravesical injections without a sound are the most simple and harmless method of genito-urinary antisepsis which can be employed in all diseases of the urethra. The use of antiseptics and hot injections by this method greatly lessens the danger of accidents in rapid dilatation of the urethra. Rapid dilatation, for simple strictures, is greatly to be preferred, with these precautions, to slow dilatation. Intravesical injections, made without the use of a sound, are quite sufficient to maintain the calibre of the dilated urethra. By these methods the indications for urethrotomy are much less frequent. Divulsion of obstinate strictures is rendered much less dangerous by the method.—*L'Union Médicale*, November 3, 1887.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 17, 1887.

LEPROSY IN ITS RELATION TO THE STATE.

ALTHOUGH leprosy has long since ceased to be endemic in Europe, and has never existed to any extent in this country, it has in the popular mind the most dreadful associations, and the very rumor of the existence of a case in the neighborhood is sufficient to throw the community into a terror. Unfortunately, the ideas which prevail are derived from the sacred writings, which contain a larger number of references to leprosy than to any other disease, and in which it figures so often as the most condign punishment, or as the type of sin, that we can scarcely wonder at this widespread dread. Admirable in many respects as are the Levitical instructions regarding leprosy, we nowhere else in ancient writings obtain such clear notions of the ignorance which existed of the true nature, or even the modes of recognizing disease. Thus it is probable that all skin affections, from itch to eczema, were regarded as leprosy, which was also thought to attack clothing and houses!

A very practical question has arisen in Philadelphia, which brings into prominence the relation of the State to this disease. A woman and her daughter came here from Brazil some months ago, and have been under the care of Dr. Van Harlingen, who recognized the nature of the disease, but humanely refrained from telling the patients. A few weeks ago he read a paper at the County Medical Society, in which these cases were described, and one patient was shown to the members. The affair, of course, became public; the daily papers took up the matter, and the Board of Health requested Dr. Van Harlingen to give the address of the lepers, and added the disease to the list of contagious affections of which, under a penalty, notice must be given to the authorities. This Dr. Van Harlingen refused to do, and an unsuccessful attempt was made to send the mother and daughter back to Brazil. Ultimately Dr. Van Harlingen gave up the patients, and the Board fined him $100 for failure to comply with the By-law. The lepers are now in strict confinement in the Municipal Hospital, and have been made aware of the nature of their terrible disease. A number of prominent physicians, feeling that Dr. Van Harlingen has been rather hardly treated, have subscribed to pay the fine, and in their letter have reflected upon the action of the Board.

From time to time we hear of lepers reaching this country, either from Norway, the West Indies, or from China, and it becomes a very important question how to deal with such cases. Up to a few years ago, opinion was very strongly against the contagious nature of the disease, but since Hansen's discovery of the lepra bacillus, facts have been accumulating to show that the virus is a fixed contagion, communicable by inoculation, like syphilis and glanders. Yet, so recently as 1881, after reviewing the literature of the world, Hirsch wrote in his *Geographical Pathology*, that "the communicability of leprosy has not been proved hitherto by a single unambiguous fact." It is impossible, however, to deny the contagious nature in view of the facts brought out by Graham, of Toronto, in his investigation into the Tracade lepers of New Brunswick, and by Besnier, of Paris, in a recent article.

In countries where the disease is prevalent, measures for isolation are gaining in favor, and in the Sandwich Islands segregation is said to have notably diminished the number of cases. The gradual disappearance of the disease in Europe was due in great part to the strict measures of isolation, and some idea of its prevalence may be obtained from the fact that more than 130 lazarettos and asylums are known to have existed in England and Scotland during the middle ages.

Having a fixed virus, and transmitted by inoculation only, the risks of contagion from isolated cases in a community are not great; indeed, so far as we know, in not a single instance has the disease been communicated to a native American by the cases which have come to this country from Norway, Brazil, or China. Patients are admitted to the hospitals without any greater fear than pertains to syphilis. While sympathizing then with Dr. Van Harlingen in his endeavor to keep from his patients the knowledge that they were lepers, we must acknowledge that the Board was right in theory in declaring the disease to be contagious, but in isolating the patients in the Municipal Hospital they have taken a very extreme view of the dangers likely to follow from the presence of one or two lepers in our midst.

CREOLIN, A NEW ANTISEPTIC.

This new antiseptic is obtained from coal tar by certain secret processes, and has lately been tried, quite thoroughly, in a purely experimental line, in Germany, by Esmarch, whose results are recorded in the *Centralblatt für Bakteriologie und Parasitenkunde*, Bd. ii., 10 and 11, and by Kortum in a more practical manner in the *Berâner klinische Wochenschrift* of November 14, 1887. Both Esmarch and Kortum report such favorable results from its use that no doubt, long ere this, many German surgeons are putting it to a practical test.

Esmarch in his experiments, made with different forms of microörganisms, found that a 1 to 5 per cent. solution of creolin acted promptly in destroying all their power, even when the spores were dry, in from ten minutes to four days according to the variety of microbe and method of exposure, and the strength of the solution of creolin. Kortum found that in several obstinate cases with stinking pus with ulcers as large as an adult's hand, in eight days the healing advanced so rapidly that only a granulating surface 2½ inches long by ⅓ of an inch wide remained. Other cases progressed as favorably with other lesions with the use of the drug, and if further experience with the substance brings forward facts in support of the statements, chiefly made by Kortum, creolin must immediately take a position side by side with iodoform, or even more powerful antiseptic dressings.

It is described as a dark brown liquid, of tarry smell and oily appearance. When mixed with water it is at first rather clear, if not stronger than a 1 to 1000 solution, but afterward becomes the color of coffee with milk in it. It may be used as all other liquid antiseptics, by ordinary measures or on tampons.

HEMIPLEGIA AND HEMIEPILEPSY IN RENAL DISEASES.

The clinical maxim formerly accepted by all and often invoked in cases of doubtful diagnosis, that limited palsies and circumscribed convulsions do not occur in cerebral uræmia, is subject to exceptions that have recently rapidly increased in number.

In addition to the cases of so-called uræmic hemiplegia recorded by Carpenter, Pätsch and Jäckel, Raymond has recently collected six instances of interstitial nephritis, in aged persons, in which apoplexy, hemiplegia, or partial convulsions occurred without any other discernible cerebral lesion at the necropsy than atheroma of the arteries and a more or less prominent œdema. Almost at the same time Chantemesse and Tenneson published a paper based upon the analysis of five cases of diffuse nephritis in which analogous nervous phenomena had occurred. A little later—*Gazette Médical de Paris*, November, 1886—Florand and Canniot published two cases of the same kind observed in the service of Raymond. Within a few weeks F. X. Dercum has reported two cases of this kind at a meeting of the Neurological Society of Philadelphia, which were published in these columns. Not all these cases are of equal value. Several of them are too complex, too obscure to be looked upon as possessing value as proof of the causal relationship between uræmia and these accidents of cerebral origin. But the fact stands that in uræmia, or, to speak more precisely, in renal disease, both localized paralyses of hemiplegic character and circumscribed epileptiform attacks are met with in the absence of any gross lesion of the encephalon.

These various phenomena are encountered in subacute and acute nephritis; especially may we look for them in chronic interstitial nephritis. The stage of the disease is usually an advanced one, in which uræmic manifestations have already made their appearance; but they have also occurred at a time when no other symptom characteristic of uræmic intoxication had yet shown itself. In some instances they have been preceded or followed by marked stupor or coma; yet again they have suddenly appeared without prodromes and unaccompanied by any other symptoms of cerebral disturbance.

Complete or incomplete motor hemiplegia limited to the extremities, or invading the face, may persist without perceptible alteration till death, or it may gradually improve, sometimes finally to disappear, sometimes to recur at a later period. The latter cases resemble the hemiplegia due to cortical softening from thrombosis. The motor hemiplegia is often associated with a hemianæsthesia, usually of less degree, but likewise variable and liable to the same fluctuations. Chantemesse and Tenneson noted in two cases conjugate deviation of the face and eyes. The partial epilepsy observed in these cases presents the well-known traits of Jacksonian epilepsy. Sometimes it is to be noted that the attack alternates, predominating now on one side, now on the other.

It is a remarkable fact, especially in view of the presumed dependence of these accidents upon uræmia, that there has been observed in a number of cases a high degree of fever. In one instance the temperature just before death reached 105.8° F.

Beyond the variability of the symptoms and the presence of albuminuria, there is nothing at all in the clinical aspect of certain of these cases to warrant us in attributing them to uræmia. Even the presence of albumin in the urine has only a relative value, in view of the fact that albuminuria is by no means rare in advanced senile atheroma. The difficulties of diagnosis are enhanced in cases of latent interstitial nephritis. The clinical picture is that of local cerebral softening, especially in an aged

person with atheromatous arteries. At the necropsy no cerebral gross lesion is found, but the arteries are atheromatous and there is œdematous swelling of the cerebral cortex varying in degree and extent.

What the pathology of these paralyses and localized convulsions may be it is difficult to say. The greater number of authorities attribute them to cerebral œdema of uræmic origin. Others invoke disturbances of the encephalic circulation due to alterations of the lumen of atheromatous arteries and pressure upon vessels. These explanations will scarcely serve. They are too general. Moreover, in many of the cases no mention is made of cerebral œdema, and in those in which its presence is recorded, it is described as a diffuse general condition to which alone hemiplegic phenomena cannot well be satisfactorily ascribed. Must we then, with Chauffard, invoke a uræmic intoxication capable of directly influencing or destroying the functions of the cerebral cells?

This view must be accepted in explanation of certain of the cases. It will not, however, serve for those in which the cerebral manifestations are unattended by uræmic symptoms of any kind; in which they happen in an individual subject, it is true, to chronic nephritis, but in no sense uræmic.

If, then, the semeiology of the cerebral accidents of patients suffering from disease of the kidneys is as yet only roughly sketched out, their pathology remains altogether obscure. The clinical facts are, however, established upon a firm basis, and it may even be questioned whether or not many attacks of hemiplegia and localized convulsions attributed in the absence of post-mortem examination, to local brain lesions, may not have been of this nature. L. Dreyfus-Brisac (*Gazette Hebdomadaire*, Oct. 7, 1887) has in two cases of hemiplegia attributed to nephritis, observed the disappearance of the manifestations of cerebral lesions coincidently with improvement, under an appropriate régime, in respect of the albuminuria, the digestive troubles, and the dropsy.

MEDICAL LITERATURE.

Dr. Skene, in his characteristically able inaugural address at the last meeting of the American Gynecological Society, stated that during the past eight years, 804 books and 7505 journal articles and pamphlets had been added to the literature of gynecology. An inference may be drawn from this of the increase of medical literature in general. The question naturally arises whether this *embarras des richesses* is an unquestionable gain. It indicates, it is true, a wonderful diffusion of printed matter among a limited number of individuals, constituting one of "the learned professions," who, as a rule, lead exceptionally busy and useful lives. This being the case, they have a right to demand of those who purvey to their intellectual wants material which shall be digestible, assimilable, and calculated to insure healthy growth.

A survey leads us to the conclusion that the multiplication of journals has been entirely out of proportion to the demands of the profession, and that the majority of them, like too many of our younger institutions of learning in this country, are leading anything but a vigorous existence, their chief object being, apparently, to satisfy the ambition, of those concerned in their projection. Herein lies a grand indication for reform. Not that we desire to have *less* literature diffused, but *better*. This can be accomplished in several ways. One is concentration; the value of which is apparent enough, if one will but recall the most successful agencies around us for the advancement of knowledge, charity, or commerce. Another, is a more rigid censorship. With two hundred and more hungry editors, eager to grasp at anything which is offered, anything to fill their columns, no matter how immature, how unskilfully arranged, or how inconclusive, what wonder is it that complaints are constantly made of the valuelessness of a very large portion of the current medical literature? It is as ephemeral as the mist before the rising sun. Very aptly does Dr. Skene remark in the address to which allusion has been made, "this multitude of gentlemen, who write more than they read, 'scatter like deer at the sound of the hunter's horn' when compelled to defend themselves in public discussion before a tribunal of competent judges in well-regulated medical societies."

Another means by which the overproduction in medical literature may be checked, is by making the terms between author and publisher analogous to those which obtain in all ordinary business enterprises, a *quid pro quo*. The inducement held out by the majority of publishers to write for glory, with perhaps a score of reprints thrown in, is about as unfair and unreasonable, not to use a harsher term, as anything can be—to the author, if his contribution is worth spreading before the public; to the public, who pay their money to the publisher, if it is not worthy. The excuse that long established custom sanctions such a procedure, is an unworthy one. Custom sanctions many an abuse, which is none the less an abuse. It is noteworthy that there are a few high-minded publishers who do not follow this course, but pay liberally for all contributions as is the custom with The Medical News. In general literature, those journals earn the largest profits which pay their contributors most handsomely. Why would not the same rule apply equally in medical literature? It would lead to the decrease of many current publications—no doubt to a process of consolidation among some of the survivors, to a merciless sifting of wheat from chaff, and to more care and painstaking on the part of authors. All of which

would contribute to the general improvement of medical literature.

DR. H. C. YARROW, of Washington, has been experimenting recently with a view to determine the value of certain reputed antidotes to serpent venom. All of them, thus far, in his hands have proved valueless with the exception of the fluid extract of jaborandi, which seems to possess antidotal powers, at least in the case of mammals, but upon fowls it appears to have no such effect. Dr. Yarrow has given hypodermatically to rabbits four-fold lethal doses of crotalus venom, and then, by the administration of 35 minims of fluid extract of jaborandi, he has prevented any serious results.

The use of jaborandi as an antidote to venom poison was, we believe, first suggested by Dr. Josso, in the *Gazette Hebdomadaire de Médecine et de Chirurgie*, Paris, 1882, vol. XIX. p. 835, and in this communication he reported a case of viper bite cured with an infusion of the leaves.

THE State University of Nebraska has established at Lincoln a patho-biological laboratory for original research into the nature and causes of the contagious and infectious diseases of animal life. It has a general working room, supplied with all the necessary instruments and books of reference; a cultivating room; an autopsy building; and a room for raising and keeping the small animals generally used in experimentation. The laboratory is under the charge of Dr. Frank S. Billings.

The Lancet of December 3d states that Sir Morell Mackenzie continues to receive highly satisfactory reports regarding the present condition of the Crown Prince of Germany. The slight enlargement of the left submaxillary gland which took place at the end of October was followed by a similar swelling on the opposite side after the occurrence of œdema in the early part of November. Considerable diminution has taken place in both these swellings. Sir Morell Mackenzie considers that in view of the fact that there has been no actual microscopic proof of the existence of cancer, the diminution in the size of these swellings is not without a certain degree of clinical importance.

REVIEWS.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS. By ROBERTS BARTHOLOW, M.A., M.D., LL.D., Professor of Materia Medica and Therapeutics in the Jefferson Medical College of Philadelphia. Sixth edition, revised and enlarged. 8vo. pp. XXIV. 802. New York: D. Appleton & Co., 1887.

THE appearance of the sixth edition of Dr. Bartholow's book on therapeutics at such an early date shows that it still retains its favored place among American text-books. The profession in general are so well acquainted with the work that it is only necessary to call attention to the appearance of this latest edition.

The articles on the newer remedies of value, such as antipyrine, antifebrin, and salol for example, are quite full, yet their literature is growing so rapidly that important contributions have appeared since this portion of the book passed through the press.

We note the statement that antifebrin acts as an antipyretic by reducing the "ozonizing function" of the red blood-corpuscles, but the only evidence brought forward to support it is that toxic doses of the drug have been found to alter the oxyhemoglobin; yet on the preceding page it is distinctly stated that "there are important differences in the action of moderate medicinal, and of toxic doses, but the effect of the latter on the blood globules introduces a special pathogenic influence which must change the character of the symptoms produced." So far as we know at present, no one has proved that the antipyretic effect of this drug depends on its action on the ozonizing power of the blood any more than it has been proved that quinine does the same thing.

The book has undergone very thorough revision, and stands as a typical representative of American thought and thoroughness, and will continue a favorite with a very large class of medical practitioners.

OPERATIVE SURGERY ON THE CADAVER. By JASPER JEWETT GARMANY, A.M., M.D., F.R.C.S., Attending Surgeon to Out-door Poor Dispensary of Bellevue Hospital, etc. 8vo. pp. IX. 150. New York: D. Appleton & Co., 1887.

THIS work is well adapted to fill the niche for which it was written, but the niche must be a very shallow one. We cannot conceive of any one wanting an operative surgery for the dead room, which must lose its value so soon as it leaves that room. But, while we would far prefer one of the manuals which treat of operations upon the living, there may be those who think differently from us. All such we would advise to invest in this book. They will find it well written, its directions explicit, clearly expressed, and based upon well established precedents and admitted rules of practice.

SOCIETY PROCEEDINGS.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, December 9, 1887.

THE PRESIDENT, JAMES PERRIGO, M.D., IN THE CHAIR.

DR. BELL exhibited a specimen showing

THE DEVELOPMENT OF BONE FROM PERIOSTEUM.

It was a section of the shaft of the femur from a patient whose thigh had been amputated ten days after receiving a compound comminuted fracture of the lower end of the femur and the head of the tibia, opening the knee-joint. Extensive sloughing had occurred, and at the time of the operation the patient was in a sapræmic condition, due to the absorption of putrid material from

the necrotic tissues. Twenty-five days later it was found necessary to reamputate two and one-half inches of the end of the femur because it was exposed, owing to sloughing of the flaps. At the primary amputation the periosteum had been stripped from the bone to the extent of nearly an inch above the point where the femur was divided. The bone removed at the secondary operation showed an undoubted development of bone in the periosteum thus detached.

DR. SHEPHERD said this case was most interesting in connection with the views lately given by Dr. Macewen, of Glasgow, in the October and November numbers of the *Annals of Surgery*. That authority held that periosteum does not initiate the reproduction of bone. In Dr. Bell's case the periosteum had certainly developed bone. He had no doubt, however, as to the correctness of Dr. Macewen's views when he states that periosteum is not the chief factor in the reproduction of bone, this function being performed by the soft tissues enclosed in the osseous tissues.

DR. MILLS regarded the specimen as illustrating the fact that Nature accomplished her ends in various ways —he also said that experiments on animals, etc., often led to false conclusions because of the disturbance of natural processes, but in cases such as the one related, Nature was not interfered with, and the processes were not artificial. Pathology often threw a bright light on physiology and helped to explain many obscure points.

PURULENT MENINGITIS.

DR. JOHNSTON reported a case which had been under the care of Dr. Molson, and in which he had performed an autopsy. Patient was a healthy woman, who, whilst in the sixth month of pregnancy, fell and struck her head. She developed soon after brain symptoms, deviation of the eyes, flexion of the neck to one side, and active delirium. She was admitted to the General Hospital, miscarried, and some days after died. At the autopsy, the ovarian veins were distended but patent, the renal veins free. There was severe parenchymatous nephritis with slight interstitial nephritis. Spleen and liver enlarged and soft. Uterus enlarged, cavity dilated, placental site free from inflammation. On the right side there was purulent meningitis of the inner surface of the pia mater extending to the base in the middle and anterior fossæ of the skull. There was thrombosis of the right lateral sinus and inferior petrosal sinus. No fracture of the base of the skull was found but there was purulent otitis media of the right side with pus in the mastoid cells. The tympanic cavity was covered with granulations. In this case there was no history of ear trouble. Dr. Johnston had no doubt that the otitis was the cause of the meningitis, and that the fall a short time previously had very little to do with the fatal result of the case.

DR. H. L. REDDY related a case of

RUPTURE OF THE HEART.

The patient, a man, aged sixty-eight, had always been in good health. A week ago he left his house at 5 A. M. to go to his work; and whilst going down stairs was seized with severe pain in his chest, after walking a few hundred yards he found the pain so severe that he had to return home. A physician was sent for, who examined him, and found nothing apparently wrong. When Dr. Reddy saw the patient, some hours after, he had vomited once and complained of severe pain in the epigastrium. Pulse normal, and no symptoms pointing to the heart. He gave him a quarter of a grain of morphia, which relieved the pain. A second dose of morphia, a few hours after, completely removed the pain, and then he seemed perfectly well; four days later, whilst sitting in his chair, he suddenly threw back his head and instantly died.

At the autopsy, Dr. Johnston found the following conditions: Pericardium moderately distended with blood, on opening the sac blood and clot to the amount of ten ounces were found, the clot forming a complete mould around the heart. A small laceration, one-half inch long, was found in the anterior wall of the left ventricle, one inch to the left of the septum, surrounded by an area of ecchymosis. On opening the ventricles, the left was nearly empty, endocardium normal, but at the spot of rupture, in separating the trabeculæ, an area of softening was seen through which a bristle readily passed. On transverse incision through the laceration, a thrombosed vessel was seen surrounded by a soft yellow area of necrotic muscle. Subpericardial fat in excess, but heart muscle not fatty on microscopic examination. There was no extreme atheroma of coronary vessels, or systemic system, and no varicose veins of the extremities.

DR. W. G. JOHNSTON exhibited some microscopic specimens of

MUCOUS POLYPI

from the nose. In eight cases the stage was an early one and the condition was strictly that of adenoma of the nasal mucous glands. In those where the stage was later, the cell outlines had disappeared, leaving only areolar tissue infiltrated with mucous fluid. This secondary change, Dr. Johnston said, was probably the reason why these growths were commonly, but wrongly, called myxomata of the nose, and confused with true myxomata, which are tumors of quite a different nature, originating in connective tissue.

DR. SHEPHERD read a paper on a case of

SUBDIAPHRAGMATIC ABSCESS.

(See page 700.)

DR. RODDICK thought that it was not improbable that the case originally had been one of empyema; that the pus had ulcerated through the diaphragm, and got between that structure and the liver.

DR. G. ROSS said that the explanation offered by the last speaker was an ingenious one, but not practicable. The anatomical structure of the parts did not give any likelihood to the supposition. The case had probably been originally one of subdiaphragmatic peritonitis which had become localized. We may have a pleurisy following a subdiaphragmatic inflammation without perforation of the diaphragm, but that such a small opening as would naturally result from an ulcerating empyema could completely drain the pleural cavity and collect below the diaphragm, was not probable. Any empyema would surely come forward more readily than downward.

DR. WILKINS said that when he first saw the case the probability of its being an empyema occurred to him, but he, for various reasons, discarded this idea. From

the early history, jaundice, etc., he was inclined to regard the case as one of abscess of the liver; but against this was the total absence of a history of fever, rigors, or sweating. He had now no doubt that the case was one of abscess between the liver and diaphragm. One feature about the case was the apparently slight amount of pain which pressure on the tumor caused.

DR. SHEPHERD, in reply to Dr. Roddick, said that not one symptom in the early history pointed to an affection of the pleura; the pain was always below the costal cartilages of the right side, and there never was any cough or difficulty of breathing. At the time of the operation there was no pus in the pleural cavity. Fluid always finds its way in the direction where there is the least resistance, and this is certainly not in the direction of the diaphragm. In his experience the pus in empyema always pointed in the neighborhood of the nipple, and when it pointed elsewhere it did so by burrowing beneath the tissues external to the lung wall of the thorax, after perforating an intercostal space.

DR. FENWICK exhibited five calculi which he had recently removed from four patients by

LATERAL LITHOTOMY.

Two cases were in men of middle age, one in a youth aged twenty, and one in a man aged sixty-nine. The last case had been a very difficult one, on account of the great depth at which the bladder was placed and the narrowness of the outlet of the pelvis. The stone was large and composed of uric acid. The patient had, after the operation, a curious diphtheritic-looking patch in the throat, and the wound at the same time had a very unhealthy appearance. The patient, however, ultimately did well. The urine ceased to flow from the wound on the thirty-fourth day. In the three other cases the urine ceased to come from the wound on the sixteenth, eighteenth, and twentieth days, respectively. In the first of these cases, where two uric acid stones had been removed, the man went home well on the twenty-first day. In all but one case a soft catheter had been introduced into the bladder to drain off the urine.

DR. RODDICK exhibited

LIGHT LARGE CALCULI,

which he had removed from an old gentleman, in the same way as the lateral operation. The stones weighed two and a half ounces. At the time of the operation the patient was in a very bad state of health, and there was considerable pus in the urine. He died nine days after the operation of anæmia. No doubt his kidneys were diseased. No autopsy was allowed. In this case the suprapubic operation had been thought of, but the former was preferred, on account of the small capacity of the bladder, which would hold only two ounces of fluid.

DR. G. E. MACDONNELL related a case of

RECOVERY IN CIRRHOSIS OF THE LIVER.

Ascites had been present to a very great extent. The patient, a woman, aged thirty-five, married, but childless, was admitted to the Montreal General Hospital in August, 1885, with a large quantity of fluid in the abdomen. She had suffered during the past year from dyspeptic symptoms, with morning vomiting. There was a history of spirit drinking. Prior to admission she was tapped to the extent of 200 ounces. There was tenderness over the hepatic region. The liver was small, measuring three inches in the right mammary line. She remained in the hospital for ten months, being tapped at first every two or three days, but subsequently at longer intervals; the amount drawn off being at first 180 to 200 ounces, but at the time of her leaving the hospital but 16 to 20 ounces could be obtained. She was tapped sixty times during the year, and taking 150 ounces as an average, altogether 8500 to 9000 ounces were removed. The woman had now gained health and strength, and was apparently well and attending to her household duties. The liver is much the same size, the abdomen now contains no fluid, and the dyspeptic symptoms have disappeared. Dr. MacDonnell said that the total amount of fluid removed in a year was large considering the patient's weight (125 pounds) and size. Much larger quantities have been taken away, but the case is instructive as illustrating the benefit to be derived from paracentesis in cirrhosis.

DR. WM. GARDNER gave the subsequent history of a case of

DERMOID OVARIAN CYST IN A PREGNANT WOMAN,

which he had removed last February, and which he had reported at the time to the Society. The case was one of twisted pedicle, with severe peritonitis. He had removed the cyst and both ovaries, washed out the abdominal cavity, and left a drainage tube in the wound for five days. At the time of the operation the uterus looked large and discolored, and he had suspected pregnancy. Eight months after the operation she was delivered of a healthy child. He thought it remarkable that the pregnancy should have gone on to full term, after the peritonitis, washing out of the abdomen, and drainage, as well as the removal of a large cyst. This was the second case in which he had removed an ovarian tumor in a pregnant woman who had subsequently been delivered of a child at full term.

DR. JAMES C. CAMERON read a paper on

THE DANGERS AND ACCIDENTS OF LOCAL TREATMENT IN PUERPERAL CASES.

He began by saying that the introduction of antiseptics had revolutionized the practice of midwifery, so that results, impossible anywhere a few years ago, are now obtainable. Still the use of antiseptics in midwifery had been abused. Uterine and vaginal douches properly administered in suitable cases are invaluable, but otherwise they may prove dangerous. The opinion appears to prevail among the profession that while the intrauterine douche is generally safe, the vaginal douche is pertectly so, and not unfrequently we find the operation entrusted to the nurse or some unskilled person, as if douching were a trivial matter. Dr. Cameron said that he believed that prophylactic douching during the puerperal state is not only unnecessary, but harmful. He was convinced that the douche is not perfectly harmless, and that it should be used with caution. The chief danger of the douche is in absorption through tears, fissures, or other traumatism. He thought absorption is more liable to take place through the

vagina than through the uterus, because the latter usually contracts fairly and empties its contents. The author of the paper held that the intrauterine douche is more dangerous than the vaginal, because fluid may be forced through the Fallopian tubes into the abdominal cavity, causing peritonitis, as in Völtz's case, or a thrombus may be dislodged from the placental site, and hemorrhage take place; again, air may find its way directly through the uterine sinuses into the veins. He had seen sudden death occur during an intrauterine injection of perchloride of iron for postpartum hemorrhage. Warm water alone should be used when it is necessary to wash away *débris;* in septic cases corrosive sublimate solution is far the most effective, but also the most dangerous. Death has occurred in sixty hours from the effects of an introduction of a sublimate douche (1 : 2000). Patients suffering from anæmia or kidney troubles are very susceptible to the action of mercury; so, too, are those who have recently been under mercurial treatment, or in whom there is a marked atony of the uterus, or extensive traumatism of the genital tract.

To avoid the dangers and accidents incident to injections in puerperal cases, the author said that

(1) The patient should always be placed across the bed in the dorsal position, with hips well raised and thighs everted. In this way, in intrauterine injections, the anterior lip can be more easily seized, and the intrauterine cavity straightened.

(2) The vaginal or uterine nozzle should be inflexible, without a central orifice in the bulb. The openings should be directed slightly backward, so that the injection stream may flow away from the fundus, not toward it.

(3) A sufficient outflow should be secured by keeping the vaginal orifice open. Before an intrauterine douche is given the anterior lip should be seized with a tenaculum, and drawn gently downward until the uterine cavity is straightened.

(4) The quantity of fluid injected should be small (1–2 quarts).

(5) Antiseptic injections should be weak. For an ordinary vaginal douche a sublimate solution of 1 : 5000 is quite strong enough. The stronger solutions should only be used in urgent septic cases. After sublimate injections a pint or two of plain hot water should be employed to wash away any retained sublimate, thus lessening risks of absorption.

(6) The injection should always be used hot (110°–112° F.), for hot water is a powerful stimulant, causing the uterus to contract and expel its contents.

(7) To prevent nervous chill and rise of temperature a glass of brandy, or some diffusible stimulant, should be given fifteen minutes before operating.

(8) During the more severe methods of intrauterine treatment, such as curetting or brushing, the placental site is apt to be disturbed, thus allowing the entrance of air, fluid, or septic matter, so these methods should be at once followed by a small douche of hot water; after which a bolus of iodoform should be passed into the uterine cavity, and the vagina should be packed with iodoform gauze.

Dr. Blackader said he would like to ask the reader of the paper under what circumstances he now advised curetting, and whether he would perform this operation whenever there were any septic symptoms present. He thought that injections should not be given too hot, for he had seen serious symptoms follow the employment of very hot injections, peritonitis even had resulted from the injection of plain hot water.

Dr. William Gardner also condemned the use of too hot injections, and the employment of a syringe with a nozzle with a central opening; he related one case of a woman with prolapsus uteri, who, when employing hot water injections, used such a nozzle. The injection was followed by vomiting and severe pain. Then the case went on to pelvic peritonitis, from the effects of which the woman still suffered. He could mention other cases where serious results had followed the use of injections properly administered.

Dr. Roddick said he was cognizant of not a few cases where serious results had followed the injection of solutions of bichloride of mercury; he thought Condy's fluid a safer antiseptic; but, best of all, is hydronapthol; it has germicidal qualities nearly equal to the bichloride, but no odor or irritating qualities, and there is no danger of poisoning.

Dr. Mills asked whether the danger of absorption is great from the vagina or uterus.

Dr. Cameron, in reply, stated that the value of curetting, in suitable cases, is unquestionable, viz., where portions of the placenta are retained; the brushing out of the uterus would not, in some cases, replace curetting. The danger of absorption is greater through the vagina than the uterus, for the injected fluid, owing to the greater tendency of the vagina to sacculate, remains longer in contact with the absorbing surface. He had written this paper as a protest against the indiscriminate and careless use of injections in the puerpera state.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, November 23, 1887.

The President, J. Solis Cohen, M.D., in the Chair.

Dr. Edward Jackson read a paper on

GLEDITSCHIN, SPURIOUS AND GENUINE.

In publishing his observations on the action of the so-called stenocarpine (in The Medical News of September 3, 1887), he stated: "In studying the action of this drug, one cannot but be struck with its similarity to that of cocaine. . . . This similarity of action raised in my mind the question, whether this new drug possessed any power which would not be possessed by a solution of cocaine to which had been added a portion of one of the stronger mydriatics, as duboisine or hyoscyamine." It seemed to him then, however, that the drug did "possess certain powers, in degree at least, peculiar to it. My impression is that the solution used, said to be a two per cent. solution, is a more powerful anæsthetic than the four per cent. solution of cocaine." He also thought that while its influence over the accommodation was more powerful than that of homatropine, that the recovery of the accommodation from its effects was more rapid than from any previously known mydriatic, except homatropine.

In this last respect he soon found he had been in error. A few days after that paper was published he came

across the records of some experiments which he had made nearly six years ago, and some of the results of which he reported in a paper read before the Medical Society of the State of Pennsylvania in 1882; and among them some trials of weak solutions of 1 to 1000 and 1 to 2000 of duboisine and hyoscyamine in his own eyes, where the recovery corresponded exactly to the recovery observed after the use of the alleged new drug. This discovery redoubled his suspicions. He then took twenty-five grains of the solution, dried it over sulphuric acid, and weighed the residue, which he gave to Dr. Henry Leffman, who dried it still further, and weighed it again; its weight, as reported by him, was 1.62 grains. This demonstrated that the so-called two per cent. solution of "stenocarpine" was not what it purported to be.

In his paper, before referred to, he objected to the name stenocarpine as probably not indicating the real source of the drug, and pointed out that Mr. Goodman's description of the tear blanket tree corresponded with that of the *Gleditschia triacanthos*, or honey locust; and stated that "extracts made from the leaves of the honey locust growing near Philadelphia, failed to exhibit any anæsthetic or mydriatic properties." About the same time he wrote to Mr. Goodman asking for specimens of the leaves, and he promised them, but they have not yet been received. Soon after this, however, he obtained specimens of leaves from Jefferson County, Texas, which were pronounced those of the honey locust by Dr. J. T. Rothrock, Professor of Botany in the University of Pennsylvania, who had been the first to suggest to him that the honey locust might be the tree described. These leaves proved as inert as those obtained in this vicinity.

Shortly after this, Dr. J. H. Claiborne published in the *Medical Record* of October 1, 1887, a detailed and illustrated account of the honey locust; stating that Mr. Goodman and Dr. Seward had fully identified it, as the source of the new local anæsthetic, and proposing therefore, to call the "new" alkaloid Gleditschin. The publication of the above facts indicating the fraudulent character of the "stenocarpine" solution was delayed until some of the genuine Gleditschin could be studied. But, simultaneously, Mr. F. A. Thompson, in the *Medical Age* of October 25th, and Dr. John Marshall, in THE MEDICAL NEWS of October 29th, published analyses of the alleged stenocarpine-Gleditschin solution, by which the fraud was fully exposed. They proved that unquestionably the solution contained cocaine and a member of the atropine group. The latter is not, however, atropine itself, as might be inferred from their papers; but on account of the brevity of the paralysis of accommodation it produces, must be, Dr. Jackson thinks, hyoscyamine, duboisine, or daturine.

In the *Philadelphia Medical Times* of November 23, 1887, Dr. Lautenbach published a brief communication entitled "Gleditschin.—A New Alkaloid," with the promise that "in a later publication this subject will be treated of more fully." The promise remained unfulfilled, doubtless on account of his early death.

After reading his account of the substance clearly entitled to the name Gleditschin, he endeavored to obtain some of the unripe fruit, in which, according to Dr. Lautenbach, the drug is to be found. With some difficulty and after considerable delay, a peck of the fruit was obtained, but the pods and seeds were most of them very nearly mature. However, Mr. James A. Kyner, Demonstrator of Chemistry in the Polyclinic, following in the main the method of Dr. Lautenbach, obtained from them a very small amount of a solution of what we believe to be the sulphate of the true Gleditschin. On evaporation it deposits crystals of a narrow rhombic form. When ammonia is added it gives a precipitate, which presently crystallizes in broader rhombs. On the frog it produced the symptoms narrated by Dr. Lautenbach, though his supply of the solution gave out before the stupor was complete. The symptoms reached their height in fifteen minutes after the hypodermatic injection of the solution, were passing off in an hour, and had disappeared entirely in less than three hours. *This solution freely applied to the conjunctiva produced no anæsthesia, or dilatation of the pupil, whatever.*

The analyses and tests above referred to, with several others that have since been published, have pretty well disposed of the alleged new local anæsthetic and mydriatic; and Gleditschin has lost its interest for the ophthalmic surgeon. But the incident, disagreeable as its ending may have been to some, is not without its useful lessons.

First. It is shown that such a fraud cannot be carried far, even with a drug as difficult of positive chemical identification as cocaine. And every such attempt at fraud can only make more brief the period, and decrease the profit, of succeeding attempts.

Second. It has been demonstrated that cocaine can produce anæsthesia through the unbroken skin; although he had pointed out (loc. cit.) that this is extremely superficial; and "To make a painless incision in tissues anæsthetized in this way, one must do it by repeated superficial cuts with the knife, keeping all the time the cut surface bathed with the solution."

Third. Attention has been drawn to the *Gleditschia triacanthos*, and the genuine Gleditschin discovered and studied nine years ago by Dr. Lautenbach, but recently in a fair way to be forgotten. And in the direction of a further study of this substance lies the probable path of profitable future investigation. The leaves have been proven practically inert, and for several months it may be unpossible to obtain specimens of the unripe fruit. But other parts of the plant might be tested for it. In the *Medical Age* of November 10th Dr. Crull states that he has cured gleet with a decoction of the bark of the root of the thorny honey locust (the more common variety), and that taking a tablespoonful of the decoction himself "caused nausea, giddiness, dimness of sight, cold perspiration, and a prickly or smarting sensation of the tongue and throat. These symptoms continued for nearly three hours, when they gradually abated. The evacuation of the bowels the following morning was very bilious and watery."

CORRESPONDENCE.

COCAINE MURIATE IN UNCONTROLLABLE VOMITING.

To the Editor of THE MEDICAL NEWS,

SIR: Though my experience with the new anæsthetic has been comparatively limited, yet I have found cocaine muriate of signal service in a few cases of ob-

stinate vomiting of pregnancy, and in one of uncontrollable vomiting.

Mrs. H. came under my care in August, in consultation with Dr. Ceist. He had been using a combination of cerium oxalate with ingluvin, in proportion of gr. v. of the former to gr. x of the latter, which for a time gave relief. When I was consulted regarding the patient she had retained no food for five days, and was threatened with starvation. I recommended quarter grain doses of cocaine in combination with subnitrate of bismuth and acid. carbolic., with mucilag. acaciæ, to be taken thirty minutes prior to some light nourishment. The patient has had very little trouble since. The cocaine was soon withdrawn, and the case progressed nicely.

It must not be forgotten, in connection with the case, that prior to the pregnancy just spoken of, two abortions were performed to save the patient from starvation.

Very respectfully,

W. D. Jones, M.D.

Richfield, Kan., Dec 8, 1887.

NEWS ITEMS.

Cholera in South America.—Health authorities at our ports of entry should bear in mind the fact that Asiatic cholera has reappeared in South America. Reports published in the Panama *Star and Herald* show that in October the disease broke out afresh in Chili. On October 22d there were 14 cases in the small city of Chillan; on the 23d 28 cases and 16 deaths, and on the 24th 16 cases and 6 deaths. Last year the disease did not appear in Chili until the second week of November, but now it has come before the arrival of warm weather. On November 26th Peruvian ports were closed against vessels from Chili.

A Congress for the Study of Tuberculosis.—A congress of physicians and veterinarians for the study of this subject will be held in Paris, near the quarters of the Faculté de Médecine, from July 25 to July 31, 1888. Professor Chauveau is announced as president, and the other officers will be distinguished members of the Paris faculty and eminent veterinarians. One day will be devoted to the study of anatomical preparations, in the laboratory of Cornil; another will be given to the examination and dissection of tuberculous animals, at the veterinary school at Alfort. French and foreign physicians and veterinarians may become members on the payment of ten francs ($2), and entering their names; they may then take part in the discussions.

The proceedings and results of the congress will be published, in French, in a volume of Transactions and in the journals.

The origin, contagion, diagnosis, and treatment of tuberculosis will receive the most thorough study. Information regarding communications to be offered may be sent to Petit, Secretary-General, 11 Rue Monge, Paris.

The Results of Medical Legislation in Indiana.—The Secretary of the Indiana State Medical Society reports in the *Medical Standard* for December, 1887, that the law, imperfect as it is, has done much good. It has reduced the number of physicians from 4695 to 4136, thus weeding out over 500 pretenders. It has driven others to take a second course of lectures and has forced others to take a first course of lectures and come in under the three years clause. It has driven from the State troops of long-haired, loud-mouthed, slouchy charlatans who made annual tours of the State, accompanied by cheap brass bands, gaily caparisoned steeds, and other paraphernalia calculated to deceive and impress the ignorant.

A Hospital for Employés.—The Cambria Iron Company, whose works are near Johnstown, Pa., has recently erected a hospital for its employés; the sanitary arrangements of the building are described as follows by the *Sanitary News*: A noticeable feature is the ventilation. In the wall back of each bed in the principal ward and about nine inches from the floor will be a register through which the foul odors will be drawn into a duct to the fire where they will be consumed. This floor is of asphalt and can be flooded, the water passing off through deck plates in the centre of the room. While the hospital contains the essential features, there are many new and valuable points about it which recommend themselves to those interested in this class of buildings.

A Copy of Rembrandt's "Lesson in Anatomy" at the College of Physicians of Philadelphia.—Last week a very fine, full-size copy of Rembrandt's famous "Lesson in Anatomy" was presented to the College of Physicians by two friends of the College, at whose order it had been painted at the Hague, where the original is.

Rembrandt is said to have been inspired to paint this picture by a sentiment of gratitude toward Nicolaus Tulpius, Professor of Anatomy, at Amsterdam, who had protected him in his youth. Tulpius is represented with his disciples, of life size, grouped around a table, on which is stretched a corpse; some are seated, some standing, and some bending over the body, while he is demonstrating the anatomy of the arm, which is dissected. The light illuminates one side of the dead body, leaving in obscurity the dresses, the table, and the walls of the room, and the contrast between light and shadow is marvellous. There is, as a critic has said, in the complexion of the group an air of mystery, gravity, and scientific solemnity which inspires reverence and silence.

Rembrandt was only twenty-six years old when he painted this picture (1632), which, by universal judgment, is placed among the greatest triumphs of human genius.

A New Hospital for Toronto.—A subscription of $40,000 heads the list for a new hospital at Toronto. It is confidently expected that the remaining funds needed will be raised without difficulty.

The Illness of the Emperor of Brazil.—From a correspondent of the *Revue Générale de Clinique et de Thérapeutique* of November 24, 1887, we learn that Dom Pedro, now aged about sixty-two, has been suffering for six or seven years with glycosuria which appeared after cerebral fatigue and disappeared after repose. During last February he was taken with more serious manifestations of his malady, while at his country place. After residing for some time in various parts of his kingdom he was sent to Europe, where he

visited Paris, Baden-Baden, and Cannes. It is probable that he will spend the present winter in Egypt and Algiers.

THE DETROIT CREMATORY is announced to be completed and ready for the use of the public.

DOCTORS IN RUSSIA.—A recent report of the members of the profession in proportion to the population in Russia gave one doctor to 18,000 people; this is the only civilized country where overcrowding is not present.

ACCIDENTAL INOCULATION IN A BACTERIOLOGICAL LABORATORY.—A Russian physician studying in Bollinger's laboratory at Munich, recently infected himself with anthrax, through a cut finger. Nussbaum thought best to extirpate his axillary glands at once.

OPENING OF THE PARIS CLINIC FOR CHILDREN'S DISEASES.—Grancher, of Paris, has enlarged and improved his clinic at the Children's Hospital, and has supplemented his own services by an auxiliary staff of specialists, whose service is upon the different days of the week. Facilities for laboratory work in histology, microbiology, chemistry, and photography, are fully provided.

PROFESSOR BOTKIN, Professor of Clinical Medicine in the University of St. Petersburg, and physician to the royal family of Russia, is at present the guest of the physicians of Paris.

PATENT MEDICINES. — Pharmacist Painter, in the *American Druggist*, states that there are 36,500 proprietary medicines in the market. He considers them utterly unworthy of physicians' sanction, and thinks that medicine and pharmacy have been materially injured by them.

AN INSTITUTE FOR CHRISTIAN SCIENCE.—The Court of Appeals of St. Louis has refused to incorporate the "Institute of Christian Science." The Court doubtless recognized the "Institute" as a money-making scheme, under the pretence of religion.

A GRAVE MISTAKE.—The *Practitioner and News* of November 26, 1887, reports the following serious accident, which occurred recently in Detroit: A careful and skilful physician of this city, recently, being about to make a vaginal examination of a patient, ordered a servant of the lady to bring him some lard. The servant understood him to say "lye" instead of lard, and brought a teaspoonful of concentrated lye, which was at that time in use in the kitchen for scrubbing purposes. The physician, not dreaming of such a mistake, and finding the lye about of the consistency and color of lard, anointed his finger and introduced it. The patient complained of atrocious pain, which the doctor thought due to some nervous trouble until his finger began to smart, when he made a closer examination and discovered the unfortunate mistake. The caustic produced extensive sloughing of the vagina and vulva, which will necessarily be very refractory to treatment. The chagrin of the physician may be imagined, though he acted only as any of us might have done under the circumstances.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM DECEMBER 6 TO DECEMBER 12, 1887.

STERNBERG, G. M., *Major and Surgeon*.—Assigned to duty as attending surgeon and examiner of recruits at Baltimore, Md.—*S. O. 285, A. G. O.*, December 8, 1887.

CLEARY, P. J. A., *Major and Surgeon*.—Assigned to duty at Fort Wingate, New Mexico.—*S. O. 285, A. G. O.*, Dec. 8, 1887.

ANDERSON, C. L. G., *First Lieutenant and Assistant Surgeon*.—Assigned to duty at Fort McDowell, Arizona.—*S. O. 285, A. G. O.*, December 8, 1887.

TAYLOR, A. W., *Captain and Assistant Surgeon*.—Assigned to duty at Fort Robinson, Nebraska.—*S. O. 285, A. G. O.*, December 8, 1887.

APPEL, A. H., *Captain and Assistant Surgeon*.—Assigned to duty at Camp at Highwood, Ill., relieving Assistant Surgeon H. O. Parley. *S. O. 285, A. G. O.*, December 8, 1887.

PARLEY, H. O., *Captain and Assistant Surgeon*.—Will rejoin his proper station (Fort Wayne, Mich.).—*S. O. 285, A. G. O.*, December 8, 1887.

HOFF, JOHN VAN R., *Captain and Assistant Surgeon*.—Granted leave of absence for one month, to take effect on or about the 12th proximo.—*S. O. 128, Department of Missouri*, November 30, 1887.

MUNDAY, BENJAMIN, *Captain and Assistant Surgeon*.—Granted leave of absence for one month, to take effect about December 15, 1887.—*S. O. 286, A. G. O.*, December 2, 1887.

BANISTER, W. B., *First Lieutenant and Assistant Surgeon*.—Ordered to proceed at once from Fort Lowell, Arizona, to Fort Wingate, New Mexico, and report to the commanding officer for duty.—*S. O. 8, Department of Arizona*, December 1, 1887.

CABELL, J. M., *First Lieutenant and Assistant Surgeon*.—Ordered for duty at Fort Niobrara, Nebraska.—*S. O. 286, A. G. O.*, December 9, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING DECEMBER 12, 1887.

GASSAWAY, J. M., *Surgeon*.—When relieved to proceed to Cairo, Illinois, and assume charge of the Service, Dec. 9, 1887.

IRWIN, FAIRFAX, *Surgeon*.—Promoted and appointed Surgeon from date of oath, December 10, 1887.—December 8, 1887. (Omitted from previous report.)—To proceed to Pittsburg, Pa., Wheeling, W. Va., Gallipolis, Ohio, Evansville, Ind., Cairo, Ill., Little Rock, Ark., Shreveport, La., New Orleans, La., Rome, Ga., Chattanooga and Nashville, Tenn., as Inspector, Nov. 12, 1887.

GUILBEAU, JOHN, *Passed Assistant Surgeon*.—When relieved to proceed to Charleston, S. C., and assume charge of the Service, December 12, 1887.

BANKS, C. E., *Passed Assistant Surgeon*.—To proceed to Portland, Maine, and assume charge of the Service, Dec. 9, 1887.

CARMICHAEL, D. A., *Passed Assistant Surgeon*.—When relieved to proceed to Washington, D. C., for temporary duty in the office of the Supervising Surgeon-General, December 9, 1887.

BEVAN, A. D., *Passed Assistant Surgeon*.—Granted leave of absence for twenty days, December 7, 1887.

GLENNAN, A. H., *Passed Assistant Surgeon*.—To proceed to Key West, Fla., and assume charge of the Service, Dec. 12, 1887.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LI. SATURDAY, DECEMBER 24, 1887. No. 26.

ORIGINAL ARTICLES.

TWO CASES OF ANEURISM IN GIRLS OF EIGHTEEN AND EIGHT YEARS OF AGE.

WITH A LIST OF REPORTED CASES UNDER TWENTY YEARS OF AGE.

BY W. W. KEEN, M.D.,

PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA; SURGEON TO ST. MARY'S HOSPITAL, ETC.

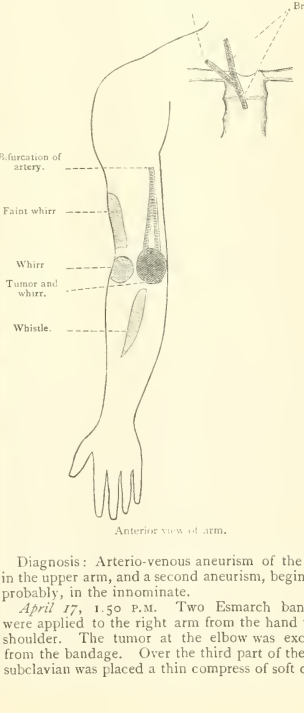
CASE I. *Spontaneous arterio-venous aneurism of the arm, with a high bifurcation of the brachial artery, in a girl of eighteen years; a second aneurism in the chest; apparent temporary cure of the aneurism of the arm from Esmarch's bandage, followed by the tourniquet and digital compression; radical cure by operation.*—For the notes of this case I am indebted to Dr. Florence Sibley-Lee, the then surgical resident in the hospital. Louisa L., a rosy Swedish chambermaid, aged eighteen years, was admitted to my clinic at the Woman's Hospital, at my instance, April 1, 1885. Her father had had a "tumor of the chest" removed. Her mother died six weeks after confinement. Six brothers and sisters are healthy. She came to this country in 1883, when she first noticed diffused red spots on the skin of her right arm and shoulder. These mottled spots still exist, some of the vessels being quite distinct. They exist only in the right arm, shoulder, and upper right chest.

In August, 1884, while walking she was sunstruck. She fell unconscious, and remained so for two days. On her recovery she first noticed a lump on her right arm. It was then small, but has increased considerably since, and now incapacitates her for her work by pain. She has had no after ill-effects from the sunstroke. The lump is just above and in front of the internal condyle, 1½ by 1¾ inches in size. It is soft and compressible, with distinct pulsation; is not tender. Over it, but neither above nor below it, a distinct thrill is felt. A bruit is heard over the tumor, over the outer part of the arm, and down the middle of the forearm, nearly to the wrist. The superficial veins are enlarged to double the ordinary size, and the bruit is heard over them, in the arm and forearm, as indicated in the drawings (Figs. 1 and 2), both as to situation and character. Pulsation is not felt in the veins. The brachial artery is distinctly felt, and its bifurcation at the upper third of the arm, well ascertained. This was confirmed later by the non-obliteration of the right radial after ligation of the ulnar above the elbow. The tumor is connected with the ulnar, the inner branch, compression of which arrests the bruit and thrill. This artery passes behind the internal condyle, as ascertained by its pulsation and by the arrest of pulsation upon pressure on the ulnar higher up in the arm.

Above the outer third of the right clavicle another thrill and bruit are heard and felt; the bruit commences at the junction of the manubrium and gladiolus, and can be heard over the right carotid and subclavian only. No distinct tumor is either seen or felt above either the sternum or clavicle.

The heart and lungs are normal; pulse 69; respirations 24; temperature 99°; general health excellent; urine, specific gravity 1021, and normal, having neither albumen nor sugar.

FIG. 1.



Anterior view of arm.

Diagnosis: Arterio-venous aneurism of the ulnar in the upper arm, and a second aneurism, beginning, probably, in the innominate.

April 17, 1.50 P.M. Two Esmarch bandages were applied to the right arm from the hand to the shoulder. The tumor at the elbow was excluded from the bandage. Over the third part of the right subclavian was placed a thin compress of soft cotton

with a cork over it, and the bandage passed firmly over this, and into the left axilla. At her request no ether was given.

Fig. 2.

Posterior view of arm.

At 2.15 P.M. she vomited some water taken a few minutes before.

2.30 P.M. Pulse had risen to 90. Complains of feeling very hot, especially in the head.

3.10 P.M. Restless and complains of pain in the head and arm. Ice-cap applied. Pulse had fallen to 78.

3.20 P.M. No coagulum perceptible in the aneurism.

3.30 P.M. Restless. Morphia, gr. 1/6, hypodermatically.

3.50 P.M. After being on for two hours, the Esmarch bandages were removed, and a Signorini's tourniquet applied high up on the arm, watched constantly by relays of students. The tumor at the elbow had apparently disappeared, no thrill was felt; a slight bruit, however, was heard. The blood returned to the arm much more slowly below than above the tumor. The thrill and bruit over the subclavian much lessened. Pulse 75.

7.45 P.M. Tourniquet removed after having been in place 4 hours. Pulsation immediately felt in radial and in the arm to within an inch of the tumor, then lost. Neither thrill nor bruit over the tumor. Arm feels "asleep." No thrill in subclavian.

8.05 P.M. Return of thrill and bruit at the elbow, but the pitch of the latter lower and softer. Thrill and bruit returned also in the subclavian.

She passed a fairly comfortable night and the morning pulse was 98 and the temperature 98.4°. In three days all the numbness disappeared and she was as well as before.

May 1. After an interval of two weeks a second similar attempt was made. Her weight had fallen from 142 to 132 lbs. partly owing probably to her much less active life. No ether was given.

1.40 P.M. Bandages applied as before and the arm rolled in cotton.

3.40 P.M. Restless. Morphia 1/4 gr. hypodermatically.

4 P.M. After 2 hours and 20 minutes the bandages were removed and the tourniquet applied. The subclavian symptoms were unaltered.

5.15 P.M. Vomited.

7.45 P.M. Tourniquet removed after 3 3/4 hours, and digital compression of the brachial substituted. Neither pulsation, bruit, nor thrill in the tumor at the elbow.

8 30 P.M. Vomited.

9 P.M. After 1 1/4 hours digital compression stopped. Radial pulse at wrist perceptible, but there was neither thrill, bruit, nor pulsation in tumor. A flannel bandage was applied to the whole arm and the arm secured to the body by a second roller.

2d. A fair night. Morning temperature 98.6°. Pulse 80.

4.10 P.M. No pulse, thrill, or bruit over the tumor, but at its inferior posterior margin a slight pulsation and bruit. Tourniquet reapplied.

7.10 P.M. Tourniquet removed after three hours. No pulsation, thrill, or bruit. Arm bandaged as before.

3d. 1.30 P.M. On removing the bandage slight pulsation was felt. Bandage at once reapplied with a moderate compress over the aneurism. Pulse 78; temperature 99.2 .

4th. Bandage removed and reapplied. Pulse 88; temperature 100.6°. No pulsation, thrill, or bruit.

Menstruation appeared at its normal date. From this date till the 20th she improved daily. The bandage and compress were continued, and she sat up on the 15th for 1 1/2 hours. On the 20th, after 19 days absence, the bruit, thrill, and pulsation returned as before, and the tumor again appeared and increased in size. The subclavian symptoms were unaltered.

29th. 1.15 P.M. Being unwilling to try the bandage again, she was etherized and the following operation was done, Dr. Thomas G. Morton assisting. An incision three inches long was made over the centre of the aneurism. A branch of the brachial, which dipped down beneath a cluster of enlarged veins, presumably the ulnar from its size and position, was first ligated. The veins were very numerous and large and their walls thin and friable, so that they tore on slight attempts at dissection and the loss of blood was very large, but was controlled by two Esmarch bandages applied above and below the seat of the operation pending the ligature of everything that bled. A number of these veins could not be separately dissected, but had to be tied in mass with the surrounding cellular tissue. No distinct point of communication between the artery and veins was found, and no sac was discovered; no evidence of clots from the previous Esmarching

was observed. The operation required 1½ hours. Strict antiseptic precautions were employed (carbolic acid being used). Combined tubular and capillary drainage by rubber tubing and horsehair was provided; the wound was closed by eight silver sutures and dressed with carbolized gauze.

30th, 9 A.M. Pulse 100; temperature 100.2°. Had passed a fair night.

7 P.M. Pulse 103; temperature 100.4°. Wound redressed, rubber tubing removed, moderate bloody serum on the dressings.

31st. Comfortable and bright. Morning temperature 99.8°; evening, 100.5°. Ten grains of quinine in the day.

June 1. Temperature 99.4°.

2d. Temperature 98.4°.

3d. Temperature 98.8°. Most of the horsehair and four sutures removed to-day, at the second dressing. Wound nearly healed. Meat diet, as she was hungry.

7th. Rest of horsehair and sutures removed; no pain. Sleeps and eats well.

8th. Sat up for an hour.

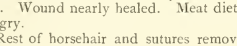
23d. Went out for a walk.

26th. Discharged well. Weight 132 pounds.

At present, November, 1887, she still remains well as to the arm. The symptoms, as to the probable innominate aneurism, remain stationary. She has married, and is pregnant.

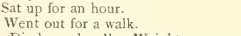
The following sphygmograms were taken before the Esmarching at both wrists, and during the Esmarching at the left wrist, and again at both wrists twenty-nine days after the ligation had been done, to show the effect on the arterial tension and the action of the heart. It will be observed that prior to the application of the Esmarch bandage the sphygmograms show a very marked difference in the two radials (Figs. 3 and 4), that of the right or

FIG. 3.



Right radial before Esmarching.

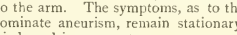
FIG. 4



Left radial before Esmarching.

diseased side showing a far greater excursion—*i. e.*, arterial relaxation—while both curves are about normal. In ten minutes after the application of the Esmarch the left radial curve (Fig. 5) is altered, its

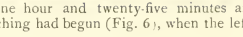
FIG. 5.



Left radial ten minutes after Esmarching was begun.

excursion increasing, its angles, both of ascent and descent, losing their acuteness, and the secondary recoil curve upward in the middle of the descent being lost. These changes go on progressively, especially the increasing range of the excursion, until one hour and twenty-five minutes after the Esmarching had begun (Fig. 6), when the left radial

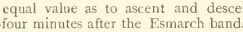
FIG. 6.



Left radial one hour and twenty-five minutes after Esmarching was begun.

tracing consists of a series of convex curves of almost equal value as to ascent and descent. In twenty-four minutes after the Esmarch bandage was removed, the left radial had regained about its normal excursion, but the curve was indistinct; especially in its descent, a character it retained four hours later (Fig. 7). At this same later period

FIG. 7.



Left radial four hours after Esmarching ceased.

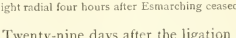
the right radial (Fig. 8) showed its first noticed excursion, but had not regained at all its normal

FIG. 8.

Right radial four hours after Esmarching ceased.

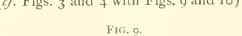
curve. Twenty-nine days after the ligation the two radials were again tested, and with the remarkable result (*cf.* Figs. 3 and 4 with Figs. 9 and 10) that the

FIG. 9.



Right radial twenty-nine days after ligation.

FIG. 10.



Left radial twenty-nine days after ligation.

excursion of the right radial (the diseased side) had dropped to even slightly less instead of nearly three times greater than that of the left. Neither curve was quite normal, however.

CASE II. *Spontaneous aneurism of an interosseous artery of the hand in a girl of eight years; spontaneous cure.*—Miss M., aged twenty-four years, from whose right arm I removed a large horny mole November 16, 1887, was a delicate child. At eight years of age she sprained her right hand while practising gymnastics with an older and larger girl. A tumor appeared in the interosseous space between the fore and middle fingers just above the knuckles. She was taken to the late Dr. Willard Parker, of New York, who diagnosticated an aneurism, both thrill and bruit being present. She felt the thrill herself. Dr. Parker advised care as to lifting, and improvement of the general health, but no operation. In the course of seven or eight years it disappeared spontaneously. The interosseous space at the site of the

former aneurism is, at present, at least twice the width of the corresponding space on the left hand, and has a soft, boggy feel. No present evidence of the aneurism exists.

These two cases are peculiar, by reason of the very early age at which they arose. In vol. lxvii. of the *Medico-Chirurgical Transactions* for 1884, Mr. R. W. Parker has collected all the cases he could find of spontaneous extracranial aneurisms in persons under twenty years old, and the entire list includes only fifteen cases. To these fifteen I add the two reported this evening, and the following eleven additional cases, making twenty-eight in all. Of these I owe the first seven to the efficient search of Dr. William J. Taylor, and the last four to Dr. James C. Wilson.

CASE XVIII. *Aneurism of the left superficial palmar arch and left ulnar.*—Jschi Woinarski (*Australian Medical Journal*, May 15, 1884). At twelve years of age, while lifting a weight in some domestic duties, patient felt something give way in her left hand, and immediately after noticed a pulsating swelling in the palm, and some time after a similar swelling at the inner anterior aspect of the left wrist. Neither rheumatism, scarlet fever, nor hereditary taint existed. Heart normal. After failure by pressure with Martin's rubber bandage he tied the brachial artery with a successful issue.

CASE XIX. *Aneurism of the elbow.*—Mr. Pollock (*British Medical Journal*, 1886, ii. 1033). A boy of fourteen years, with ulcerative endocarditis. The aneurism appeared three days after admission. Death followed, without interference with the aneurism, in a few days, and embolus was discovered at the seat of the disease.

CASE XX. *Arterio-venous aneurism of the occipital artery and right and left transverse sinus.*—(Rizzoli, quoted by Bramann, *Archiv für klin. Chir.*, 1886, xxxiii. p. 69). Female, aged eight years. Caused by exposure to the sun apparently. Without treatment the child died of meningitis. The post-mortem showed a defect in the skull, and the communication above stated. (This case and the two following I must cite at second hand, as the original references are not accessible to me.)

This case is the only one, besides the first case I report, of spontaneous (?) *arterio-venous* aneurism arising under twenty years that I have found. It is, at least, a curious coincidence that it apparently arose from exposure to the sun's heat as my own first case did from, or, at least after, sunstroke.

CASE XXI. *Aneurism at the elbow.*—(Jobert, quoted by Bramann, *vide antea*, p. 22). Male, aged eighteen years. Spontaneous origin. Cured by two injections of liquor ferri.

CASE XXII. *Varicose aneurism of popliteal.*—(Boling, quoted by Bramann, *vide antea*, p. 38). Male, aged sixteen years, apparently spontaneous origin. Sudden on-set. Cured by amputation. The popliteal artery and vein had been perforated by an exostosis. (Perhaps this case should be excluded by reason of its cause.)

CASE XXIII. *Spontaneous aneurism of left iliac.*—Alfred C. Post (*New York Journal of Medicine and Surgery*, iii. August 26, 1840). A blacksmith, aged twenty years, had had syphilis. Nine months previously he had first noticed the tumor, size of a filbert, with marked pulsation. It was treated as a bubo, and finally opened, when its aneurismal character was first discovered. Death. No autopsy.

CASE XXIV. *Aneurism of the arch of the aorta.*—Mr. Hutchinson (*Transactions of the Pathological Society of London*, v. 104). A girl, aged four years. No prior symptoms of aneurism. Child died after ten days' illness, of acute pericarditis. Mr. Hutchinson believed that the aneurism originated as an abscess, and had ulcerated into the vessel. The lining membrane of the aorta was smooth and perfectly healthy up to the edges of the orifice of communication (one-fourth by one-eighth of an inch) with the sac. This was the size of two chestnuts placed side by side, and hung from the arch of the aorta into the pericardium, compressing somewhat the pulmonary artery. The heart was normal, but in the lungs were tubercles, with chalky concretions in the bronchial glands. (Possibly this case should be excluded from the list as not probably arising spontaneously in the artery.)

CASE XXV. *Aneurism of the ductus arteriosus in a child a month old.*—Martin (*Bull. Soc. Anat.*, 1827, ii. 17.) Size of nut, filled with a clot, and impervious.

CASE XXVI. *Aneurism of the abdominal aorta in a fœtus, causing dystocia from the size of the tumor.*—Phänomenow (*Archiv f. Gynækol.*, 1881, xvii. 133). Breech presentation; stillborn; circumference at navel fifteen and three-quarters inches; circumference of head thirteen inches; endoarteritis of aorta; dilatation of left ventricle.

CASE XXVII. *Aneurism of the arch of the aorta in a child of eight years of age; result unknown.*—Roger (*Bull. Soc. Méd. des Hôp. de Paris*, 1863, p. 499). Child of ten years; out of health for five years. First suffocative attacks at eight years of age; tumor above and to left of sternum. Passed from under observation.

CASE XXVIII. *Aneurism of the arch of the aorta in a boy of thirteen years of age.*—Sanné (*Rev. Mens. des Malad. de l'Enfance*, Feb. 1887). Dyspnœa; death; cardiac hypertrophy; aortic arch thinned, dilated with an aneurism; aortic valves with vegetations.

The cause of spontaneous aneurism is most frequently an embolus arising from valvular cardiac disease. The most remarkable case arising in this way that I have found is the one reported by Langton and Bowlby, in the *British Medical Journal*, 1886, ii. p. 1031. This case seems to be absolutely conclusive as to the causative relation between embolism and aneurism.

The girl, aged twenty years, had ulcerative endocarditis. Three and four weeks, respectively, before her admission to the hospital aneurisms appeared at the right elbow and right popliteal space, for which the brachial and femoral arteries were successfully tied. Six weeks after admission she became hemiplegic, and died two weeks later. The sinuses of Valsalva were dilated, the arteries diseased at a large number of places, multiple emboli and aneurisms were found in the vessels of the brain, trunk, and extremities.

But we must also recognize endoarteritis as another distinct cause. That this may begin soon after and even before birth Cases XXV. and XXVI. will show. Rauchfuss in his Dissertation (1869) has collected the literature bearing on the subject and well discussed it. It is certainly very rare in early life as is natural, but when it does occur may easily give rise to aneurism. Moutard Martin (*Bull. Soc. Anat.*, 1875, p. 775) gives a striking case of atheroma of the arch and hypertrophy of the heart in a boy two years old, which presents all the needed factors for the later formation of such an aneurism had not the child's life been suddenly cut short by smallpox.

Many of the cases in the table of Mr. Parker arose also from embolism. But a few arose from

endoarteritis, as proved by the autopsies. In my first case the heart was normal. The aneurisms, I believe, arose from the diseased state of the arterial walls, which was first shown by dilatation of the smaller arteries causing the peculiar mottling of the surface nearly two years before the presumable origin of the aneurisms. The vessels being weakened, it only required some sudden strain, or possibly a blow, as in her fall when sunstruck, to cause a rupture, this rupture apparently at once breaking also into the similarly weakened coats of the neighboring veins at the elbow (the diseased state of the coats of the veins was shown conclusively at the operation), while in the innominate the second aneurism is limited to the artery alone. The first two sphygmograms seem to confirm this view, for while generally that taken on the diseased side shows lessened force, in this case the universally dilated and weakened arteries allow of a larger sphygmographic excursion. It is extremely interesting also to notice that, though the brachial had a high bifurcation and the ulnar alone was tied, yet the effect of the operation was to restore the right (diseased) radial to almost the same sphygmographic tracing as that of the left.

As to the treatment, I deemed it best to discontinue the Esmarching on both occasions by reason of her general condition of extreme restlessness and discomfort (in spite of her fortitude), and the marked variation of the left radial pulse. This showed a profound change in the increased arterial tension and altered curve (Fig. 5). The first could have been overcome by ether, but the anæsthetic might have added to the circulatory dangers. Esmarch's bandage has been applied continuously for as long as eight hours I knew, but I was unwilling to risk its further application in this case in view of the possible cure by the substitution of the tourniquet and also the good prospect of relief by an operation, as was shown later. As it was, an apparent cure was obtained for nearly three weeks by the tourniquet, digital compression, and compression by a roller bandage.

The operation was chiefly noticeable for the difficulty with which the hemorrhage was controlled on account of the diseased condition of the walls of the veins. They tore on the application of the slightest force, and at a number of points had to be tied *en masse* with the surrounding tissues to give additional firmness. The result was especially gratifying not only in the fact of a cure, but that I had no trouble from secondary hemorrhage, which I attribute to the antiseptic method. This secured the speediest possible union without any inflammatory reaction. The arm was entirely well in nine days after the operation.

ABDOMINAL SECTION FOR PERFORATED TYPHOID ULCER.[1]

BY THOMAS G. MORTON, M.D.,
SURGEON TO THE PENNSYLVANIA HOSPITAL, ETC.

IN THE MEDICAL NEWS of November 26, 1887, in an article on "Surgical Consideration of the Abdominal Complications of Typhoid Fever," by Dr. Thomas S. K. Morton, two cases of abdominal section for perforating typhoid ulcer are reported. The first operation was performed at Strasburg in October, 1885, by Professor Kussmaul, who excised that portion of the gut including the perforation; the wound was closed by Lembert sutures, the peritoneal cavity cleansed with a salicylic solution, a large drain was inserted, and the abdominal wound closed; the patient never reacted, and died eleven hours afterward.

The second case was under the care of Mr. T. H. Bartleet about a year ago at Birmingham; perforation was diagnosed, an abdominal section was made, "great fecal extravasation was discovered upon opening the peritoneal cavity, an unsuccessful hurried search was made for the bowel opening, the cavity was irrigated, a drain put in, and the parietal incision was closed; the patient died during the second day after the operation." These two cases, with the one which very recently came under my observation, constitute all the instances I have been able to find of surgical interference in the intestinal complications of typhoid.

Even the most recent works on abdominal surgery make no mention of the surgical treatment of this complication in typhoid fever, nor of the possibility of repairing the intestine after perforation.

In the Philadelphia *Medical Times* of December 11, 1886, Dr. James C. Wilson called the attention of the profession to the possible propriety of surgical interference in perforating typhoid ulcers, and says: "In point of fact, the objections which may be urged against laparotomy in intestinal perforation in enteric fever, are no more forcible than those which would have been made use of, at first, against the same operation in gunshot wounds of the abdomen," and the fact must not be overlooked, says Dr. Wilson, that "while a few cases of perforation occur in the second week of the disease while the infective process has yet some time to run, a far larger proportion take place in the period of convalescence when the condition of the patient, except for deep ulceration, often single, is tending toward recovery."

Granted that the diagnosis of perforation has been made out, shall a patient, although in a most unfavorable condition from the very nature of the malady for any operation, be allowed to perish? or ought the surgeon to feel justified in making an attempt to save life? Indeed, is it not his duty to open the abdomen and repair the perforated gut? Especially it would seem to be indicated when the accident has been early recognized, and the patient not in a sinking or moribund condition.

Although recoveries after supposed typhoid perforation have been reported, it is highly probable that there was an error of diagnosis, at least recovery must be extremely unusual, for the fatality of such a complication is universally recognized.

The following case represents, so far as I am aware, the first operation done in this country for the repair of a perforated typhoid ulcer; unfortunately it was not undertaken until many hours after the accident had occurred, but the patient's condition even at that late period gave sufficient encouragement to

[1] Read before the Philadelphia Academy of Surgery, December 5, 1887.

warrant the performance of a formidable operation under most trying circumstances, and which, I believe, in no wise hastened the fatal termination.

Lee A., aged twenty-three, enjoyed perfect health until the last week of October, 1887. He then acquired specific urethritis, but was little troubled thereby and continued his usual occupations. One week later he first presented symptoms of typhoid fever.

His was what is commonly called a "walking" case of that disease, and he was scarcely in bed at any time until the last day and a half previous to his sudden death. Dr. Lewis W. Steinbach was his physician, and so light did the case seem that he had ceased visiting him regularly. Although at most it was but the end of the third week of disease his temperature had for several days been scarcely above the normal. On the afternoon of November 12th, he felt very well, and in the absence of his family he ate a hearty meal of meat, etc.

A few hours afterward he was seized with most excruciating pain in the right lower portion of the abdomen, followed shortly by a violent chill and subsequent rapid rise in temperature and pulse and respiration rate.

The abdomen became tympanitic, and the pain more diffuse.

I saw him in consultation next morning, positively diagnosed perforated typhoid ulcer, and urged abdominal section as the man's only chance. To this advice he and his friends were sensible enough to conform, and preparations for operation were at once made.

The man was of splendid physical frame, and at the beginning of his illness had weighed 190 pounds. Just before operation his temperature was 104½°, pulse 156, respiration about 45. His face was deeply flushed. He seemed perfectly rational; being able himself to decide in favor of the proposed operation. During the night he had vomited several times, but otherwise the symptoms aggregated simply as above at this time.

A room was cleansed as well as possible; anæsthesia by ether induced, and he was transferred to the table and the abdomen shaved and made surgically clean.

Operation.—Twenty hours after perforation; condition as above. A median incision from just below the umbilicus to the symphysis pubis was made. Considerable yellowish serum poured out, and in it floated flakes of purulent lymph. A little gas and feculent material also thus made their exit. The small intestine was at once turned out, and searched from the cæcum upward. About three feet above the valve a perforation was discovered. It was about three-eighths of an inch in diameter, and occupied the lower (toward the cæcum) end of a large ulcerated Peyer's patch. This lesion was repaired by turning the whole area of ulceration into the lumen of the bowel by means of eight Lembert sutures. These were started into the two outer coats of the bowel, about three-sixteenths of an inch from the edge of the ulcer, brought out again one-sixteenth of an inch from that edge, then reintroduced in like manner upon the other side of the ulcer, paying no attention to the ulcer and bowel-tissue between. When these eight sutures were tied, the perforation, ulcer, and the bowel-tissue below it turned into the lumen of the bowel, whilst the peritoneal surfaces came into apposition above. This done, and the remaining portion of the intestine having been examined, attention was directed to a necrotic-looking ulcer which had been observed not far above the cæcum.

The ulcers were all outlined upon the peritoneal surface by a deep dusky-red, slightly swollen area corresponding to their own outlines. The one especially referred to presented in a portion of its area a gray aspect, as if of sphacelus. Although there was no actual perforation at this point, its speedy occurrence was thought likely, and that the more prudent course would be likewise to turn in this ulcer area. This was accordingly done with about six Lembert sutures. No other lesions were discovered upon further search of the intestines, etc., although ulcerations extended to quite a high point of the small gut. The whole intestine was greatly distended with gas, and quite difficult to manipulate: it was congested to a dusky-red hue throughout, while in various sized patches here and there the peritoneal covering of the gut was in a state of arterial hyperæmia, with an occasional recent ecchymosis.

The abdomen was then cleansed by very copious irrigation with water which had been boiled, and allowed to cool to a temperature of about 110° to 105°. Then the cavity was sponged dry, and the intestines returned: they had during the whole process been protected by towels wrung out of hot water, and frequently changed.

Considerable difficulty was experienced in returning the intestines from their great distention, but it was accomplished without resorting to puncture.

The parietal wound margins were then brought into apposition with a glass drain running through the lower extremity of the wound, and down to the bottom of the pelvic cavity.

The patient speedily became conscious upon withdrawing the anæsthetic, and remained so, without pain, for several hours, although the pulse, temperature, and respiration still kept very high. Six hours after operation, he suddenly sank into a collapsed condition, became cold and pulseless, and in an hour died.

Post-mortem examination, twenty-four hours after death. Decomposition far advanced. Drain-tube had been removed shortly after demise. Upon opening the abdomen by an incision parallel to the operation-wound, everything was found to be as it should. The intestines were distended with air, and also contained a small amount of yellow feculent liquid. Some few of the coils in the upper portion of the cavity were slightly adherent from the presence upon their surface of recent, healthy looking lymph. Others of the coils were congested to a bright pink color. There were no subperitoneal ecchymoses upon the intestines, but here and there, upon the surface of the mesentery, near the intestinal attachment, were to be seen such extravasa-

tions; none were of greater extent than a half inch diameter. In the deeper tissues of the intestine, however, ecchymotic spots were present at quite a number of points—one larger than a quarter inch in diameter.

Typhoid ulcers extended to a distance of probably eight feet above the cæcum; those nearest it being most marked, and, with one or two exceptions, furthest advanced. Three inches above the valve was the ulcer which had looked necrotic at the time of operation, and which had been turned into the lumen of the bowel as a precautionary measure. It was in excellent condition. Three feet above the cæcum the repaired perforated ulcer was come upon, and found in like excellent condition.

No additional perforations were discovered, and the intestine when distended even forcibly with water did not leak or give way at any point.

The lumen of the bowel at the points of suture, when moderately distended, was at least an inch. There was marked enlargement of the mesenteric glandular system. About two ounces of clear serum had collected in the hollow of the sacrum since taking out the drain tube, which had been done a few moments after death. The peritoneum was perfectly clean and free from extraneous matter, purulent lymph, or blood. The parietal incision had undergone no other change than that of simple gluing together of its surfaces.

The examination did not extend beyond the abdomen: otherwise than as above, the search of that cavity was negative.

Time for operation.—As soon as the diagnosis of perforation has been made out, the operation should be immediately performed, every moment of delay increases the danger of the situation; indeed if any successful results are to be chronicled, those operations which are undertaken immediately after the perforation will unquestionably be the successful ones.

Method.—One of three methods can be adopted, should an operation be decided upon: First, the perforation can be closed with Lembert sutures; second, a formal excision of a portion of the gut, including the entire ulcer as performed by Kussmaul; or third, the bowel can be brought to the surface and an attempt made to form an artificial anus.

Incision.—The median abdominal incision affords the best opportunity for an examination of the intestines; it should be ample and extend from the umbilicus to within two inches of the pubes; any portion of the intestine likely to be involved can thus be easily reached; the search should be thorough, and in addition to closing the perforations, the intestines should be carefully examined to determine the condition of other ulcers, and if any be found in which perforation seems likely to occur, such should be turned into the bowels by Lembert sutures in a similar manner.

Prior to abdominal closure the belly should be thoroughly cleansed with hot water. The after-treatment would not vary from the usual treatment of typhoid fever.

It is interesting to note that an examination of the specimens of the above case showed that although a considerable amount of tissue had been turned in, in both places, where the perforation existed, and where a perforation seemed likely to occur, no unsafe or marked diminution in the calibre of the bowel was found.

TREATMENT OF INTRALARYNGEAL ABSCESS FROM NECROSING CARTILAGE.

BY J. SOLIS COHEN, M.D.,
OF PHILADELPHIA, PA.

On the principles of good surgery, intralaryngeal abscess from diseased cartilage is best treated by splitting the larynx in the middle line, removing the dead structures, and thoroughly scraping the parts down to healthy tissue. This being accomplished, measures should be immediately taken to provide for drainage in case of continuation of the suppurative process and to adopt such aseptic management of the parts as the conditions found may indicate. Thorough response to these indications may require precautionary tracheotomy for respiratory purposes until subsidence of the diseased process has taken place, or for purposes of securing functional rest to the larynx when such subsidence is not going to take place.

This plan is far more judicious than to await the fragmentary discharge of carious particles, or carious cartilages by expectoration, or attempts at their withdrawal by intralaryngeal procedures through the normal apertures. When the larynx is exposed by section to direct vision, the entire extent of the disease can be determined, and fatally diseased tissues be removed at once. The impairment of voice which may follow must be regarded as a secondary matter in the great majority of instances. Prompt treatment of this kind ought to save many cases that perish because proper surgical interference is postponed so long that the hurried tracheotomy performed in an emergency merely saves the patient from impending suffocation, while he dies a few days later from septic poisoning, the result of absorption of pus which should have been evacuated by the most direct access possible, whether by intralaryngeal puncture or incision, or by cutting down upon the parts from the exterior.

A CONTRIBUTION TO THE PHYSIOLOGICAL ACTION OF THE HYDROBROMATE OF HOMATROPINE,

WITH A SUMMARY OF ITS ACTION ON THE EYE.

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Action on the eye.—The thorough study of the action of hydrobromate of homatropine by Risley[1] and Jackson,[2] in which they prove that this drug is

[1] The Comparative Value of the Mydriatics. S. D. Risley, M.D. Trans. of the American Ophthalmolog. Soc., 1881.

[2] Homatropine Hydrobromate. E. Jackson, M.D. THE MEDICAL NEWS, July 24, 1886.

entirely satisfactory for the correction of anomalies of refraction, and that it is an efficient and reliable mydriatic, is so entirely in accord with our own experience that this communication will not be burdened with statistical facts in further confirmation of this belief.

Method of employment.—In order to acquire full control of the accommodation, frequently repeated instillations of the drug must be employed. Jackson prefers a solution of a strength equal to 1 in 50 or 1 in 40. Our own experience has been almost entirely with one equal to 1 in 80, and we have only occasionally used stronger solutions. The patient is directed to put a drop of such a solution in each eye at bedtime on the night before the measurement is to be made, and every fifteen minutes for one and a half hours the next morning. The latter instillations are most advantageously made by the surgeon himself. If the ordinary tests do not then show that the accommodation is under control, the instillations may be continued. Very occasionally it has seemed wise to repeat this procedure on the following day.

Pupil and accommodation.—As has been noted before, the effects of this drug upon the pupil and the accommodation proceed *pari passu*—in other words, dilatation of the pupil and paralysis of accommodation end together.[1] The pupil usually begins to dilate in from seven to twenty minutes after the first instillation, the average in about fifty observed cases being from ten to fifteen minutes. The drug obtains control of the accommodation in about one hour—Jackson says in from forty to ninety minutes—and begins to lose its hold in from one to two hours; in Jackson's observations in from one to six hours. Recovery takes place in from eighteen to seventy-two hours. When the duration of the drug's effects was longer than three days, suspicion was not wanting that a perfectly pure homatropine had not been obtained. Homatropine probably dilates the pupil, as atropine does, by a peripheral action. The present communication does not include experiments upon this point.

Local effects.—Slight smarting is not infrequently complained of by the patient immediately after the application. Oliver[2] states that the conjunctival irritation of hydrobromate of homatropine may be avoided by the use of a perfectly neutral salt. The smarting is of no moment, although after repeated instillations slight injection of the bulbar conjunctiva is, we think, always present. This hyperæmia is well described by Jackson (loc. cit.). We have in one instance only seen a distinct conjunctivitis follow the frequent use of the drug. The homatropine solution in this instance was freshly prepared and the applications were made with our own hand. In a few cases we have observed after the use of this mydriatic in the manner just described, that a *slight* gray haze appeared in the fundus, or that the choroid became "woolly." These appearances invariably had disappeared when the effects of the drug had subsided. Such slight changes in the eye ground are scarcely seen or not seen, according to circumstances, that this point needs verification. Jackson has noted that hypodermatic injections of homatropine produce hyperæmia and later abscess. We have no observations to add to this statement.

General effects.—The toxic effects which quite frequently appear after the use of duboisine and much less frequently after atropine and hyoscyamine are well known. The comparative great infrequency of constitutional disturbance after the use of even frequently repeated instillations of strong solutions of homatropine renders this method safe just as it is reasonably accurate. In more than two hundred cases Jackson found only three who complained of feeling a little "strange" or intoxicated. Risley[1] has observed distinct drowsiness.

Ziem,[2] by the employment of a small quantity of a one-half per cent. salve of homatropine in the conjunctiva, produced distinct intoxication. We have in our series of cases seen one instance of hallucinations and incoherency of speech. The patient was a highly neurasthenic woman nearing the menopause. A distinct *influence upon the circulation* is a phenomenon quite commonly to be noted after the frequent instillation of this drug in the conjunctival sac. Jackson (loc. cit.), in speaking of its action upon the circulation, says, "In my experience a decrease in the pulse-rate is the most constant symptom produced. Next to this is an increase in the fulness and force of the radial pulse." In our own experience a distinct decrease in the number of pulse-beats has frequently, but not invariably, been present. In order to determine experimentally the reason of this slowing of the pulse, as well as the action of the drug upon the cord and peripheral nerves, this paper was especially undertaken.

Summary.—Hydrobromate of homatropine, properly applied by frequent instillations, is a reliable mydriatic for the correction of anomalies of refraction in healthy eyes. Experience with us is not at hand to determine its value for this purpose in eyes affected with retino-choroidal disturbance. Atropine and hyoscyamine are preferred, for the obvious reason that their prolonged action is desirable as a method of treatment. The danger of systemic disturbance from homatropine is far removed, even when repeated instillations have been made. Its temporary action upon the pulse causes no inconvenience to the patient. Slight hyperæmia of the conjunctiva almost invariably follows its use; true conjunctivitis, if it occurs at all, must be excessively rare.

When a dose of homatropine amounting to three-quarters of a grain is injected into the posterior lymph sac of a medium-sized frog, there follows in the course of from one to two minutes, a peculiar change in the respiratory rhythm resembling closely the so-called Cheyne-Stokes breathing; this is followed by a marked decrease in respiratory movement, both as regards numbers and depth, the breathing becoming more and more shallow, and finally stopping entirely after the lapse of three minutes from the administration of the drug. Tests show at this time that sensation is entirely unaffected,

[1] Jackson, loc. cit. Schavi, Arch. f. Ophthalmologie, Xxxvi, [illegible] 1890.

[2] Ziem, Virchow's Jahresbericht, Medicinische, Jhrg. 1887.

[1] Risley: Verbal communication.

[2] Centralblatt f. Augenheilk., Aug. and Sept. 1887.

and that voluntary movement is well preserved. But slight changes take place in the condition of the batrachian after this for many minutes; but finally, forty minutes after the poisoning, slight tetanic spasms develop themselves, which at first seem to be due to external irritation, but which later occur entirely without cause from the periphery apparently. The stage of spasm, however, lasts but a few minutes, and the frog rapidly passes into a condition of relaxation and paralysis.

At this time electricity produces normal contractions in the muscles, while galvanizing a motor nerve trunk calls forth a response in the tributary muscles, showing that the drug in producing paralysis must act on the spinal cord or brain.

That it acts on the spinal cord is proved by the fact that if a limb be protected from the action of its power by tying its artery, reflexes fail as completely when stimuli are applied to the protected as when irritation is used to the unprotected leg, so that the influence cannot be on the sensory nerves. Further than this, if another frog have a ligature tied tightly around the limb, in such a manner that nothing escapes its grasp save the nerve trunk, and the drug be given below the ligature into the limb, reflexes remain quite as active on impulses applied to the drugged as to the normal leg. Again, we have proved that the direct application of drop after drop of a solution of six grains to the ounce of water to the bared sciatic fails to retard the passage of sensory impulses up to the spinal cord.

In one experiment, however, it appeared that when the drug was given into the body, and the limb was protected, reflexes at first were somewhat stronger on irritating the protected toes than when the unprotected foot was irritated. This condition was only temporary, and must have been due to some fallacy in the test, since the other experiments directly on the nerve trunk failed to discover any influence. When the drug is injected directly into a limb, and held there by ligature above, the muscles seem to retain their power of reacting to the electric current as normally as usual.

We may, therefore, conclude that homatropine produces, in very large dose, at first but a slight change of respiratory rhythm, followed shortly by failure of respiration, which is again succeeded after some time by a period in which tetanic spasms assert themselves, alternating with relaxations approaching paralysis, which finally deepens into absolute palsy, with failure of all nervous phenomena. The spasms are evidently, from their tetanic character, spinal, as is also the palsy, the nerve trunks and muscles being unaffected. These experiments coincide with those of Tweedy and Ringer,[1] who, carrying their experiments to a greater length of time, found that in six to eight hours the palsy was replaced by a return to voluntary movement, which was associated with tetanic spasms of greater intensity than the first.

The action of this drug on the circulatory system is, however, much more interesting to the clinician, since it almost invariably produces a slowing of the pulse when frequently dropped in ordinary solution into the eye.

The following table shows better, and more briefly than can be done by ordinary text, the effect of the drug when applied to the heart lying *in situ*:

Time.	Drug.	Pulse.	Remarks.
9.03	.....	42	
9.04	.....	42	
9.05	5 drops	42	Solution 3 grs. to ½ oz.
9.06	.....	36	
9.07	.....	30	Diastole prolonged, systole incomplete.
9.08	.....	30	Diastole very full.
9.13	.....	30	
9.15	5 drops more	.....	
9.17	.....	30	
9.19	.....	26	
9.28	.....	26	Fibres of heart muscle about apex very well marked.

From this experiment it becomes evident that homatropine slows the pulse by a direct action on the heart itself, or its ganglia, or the peripheral ends of the vagi. Tweedy and Ringer (loc. cit.) also reached identical results.

In the experiments performed by us on the higher animals (dogs), notwithstanding the fact that they were frequently repeated, we found that large amounts of the drug affected the heart but little.

When ten drops of a solution of six grains to the ounce are injected into the jugular vein, in the course of from one to two minutes there occur a slight fall of pressure, and an equally slight decrease in the number of pulse-beats. If the dose has amounted to as much as thirty drops, these symptoms occur again, but to a more marked degree, the rate falling as much as thirty or forty beats per minute, while the pressure may fall an equal number of millimetres of mercury. That the fall of pressure is not due to depression of the vasomotor system is proved by the fact that the production of asphyxia always was followed by rise of pressure; and that the slowing of the rate was partly due to vagal stimulation, was proved, we think, by the fact that section of the vagi always caused a marked increase in the pulse-rate, although not such a rise as would appear if the inhibitory apparatus were intact. These results were reached both in curarized and non-curarized dogs, and are undoubtedly correct.

The conclusions which we think may be drawn from these experiments are as follows, namely, that homatropine slows the heart of both frog and mammal, by a direct depressing effect on that viscus, aided at the very first by a stimulation of the inhibitory apparatus, as was witnessed by the effect of section of the vagi in dogs, and by the prolonged and full diastole in the heart of the frog.

It will be seen, therefore, that Tweedy and Ringer were right in their statement that homatropine acted upon the heart in much the same manner as atropia itself, although to a weaker degree. Beyer has also reached results on the heart of the terrapin similar to our own.

[1] Lancet, 1880, vol. i. p. 795.

FRAGILITAS OSSIUM.

MULTIPLE FRACTURES (THIRTY-TWO) OCCURRING IN VARIOUS MEMBERS OF A FAMILY.

BY T. D. FOREST WILLARD, M.D.,
OF PHILADELPHIA

THE father of the brittle family described below was a small, spare man; the mother, large, corpulent, and excessively hysterical. There was no history of broken bones in the ancestry of either parent. Both denied the existence of syphilis, and neither of them bore any traces of this disease. The children were all small—some of them almost dwarfs; all were puny and had notched teeth, still they rarely suffered from serious illness, and as there have been no deaths an opportunity has not been offered for an examination of the osseous tissues.

A.—Father.

1. Fracture of right clavicle. Direct and decided violence.
2. Fracture of right clavicle (several years later). Direct and decided violence.
3. Fracture of rib. Direct and decided violence.

B.—Daughter, now eighteen years old. Height, four feet.

1. Left femur, upper third, twelve months. Fell one step to pavement.
2. Left femur, upper third, two and a half years. Tripped on carpet.
3. Left femur, upper third, three years. Slipped upon oil-cloth floor.
4. Left femur, upper third, four years. Jumped from low stool.
5. Left femur, upper third, seven years. Slipped on ice.
6. Left femur, upper third, seven and a quarter years. One day, after resuming walking, turned suddenly and callus snapped.
7. Left femur, upper third, nine years. Fell two steps.
8. Right femur, upper third, twelve years. Tripped on carpet.
9. Left clavicle, seven years. Fell down stairs without other injury.

(Both femora now united with a projection anteriorly about two inches below the trochanters. The fragments are at right angles to each other; but union has been strong and serviceable for the last six years. Walks with difficulty.)

C.—Daughter.

1. Right femur, upper third, four years. Turned suddenly while standing at a window; screamed before she fell.
2. Right femur, upper third, seven years. Tripped on carpet.
3. Right femur, upper third, sixteen years. Fell on ice.

Left clavicle, six years. Fell from a chair.

Left clavicle, twelve years. Fell backward on floor.

(Femur united with right-angled deformity laterally.)

D.—Daughter.

1. Right femur, upper third, eight weeks. Cause unknown.
2. Right femur, upper third, fifteen months. Slipped on orange-peel.
3. Right femur, upper third, twenty-two months. Fell one step to pavement.

(Femur now firmly united for eighteen years, but with two inches of shortening and with anterior angular deformity.) (Dislocation of right shoulder at five years. Burned over nearly one-third of surface at fifteen, but survived.)

E.—Son.

1. Right femur, upper third, two years. Fell about eight inches.
2. Right femur, upper third, eight years. Knocked down in the street.
3. Right clavicle, three years. Fell from the top of a sewing machine.
4. Right rib, three years. Same accident.

F.—Daughter.

1. Left clavicle, at birth. (Easy labor.)
2. Left clavicle, thirteen months. Fell from a stool.

G.—Daughter.

1. Right clavicle, one week. Cause unknown.

H.—Daughter.

1. Left clavicle, at birth. (Easy labor.)

I.—Son.

1. Left clavicle, three weeks. Fell from a bed.

J.—Son.

1. Rib, seven years. Fell down stairs.

Only one child escaped. She was the largest and strongest of the family and has now two children, neither of whom has as yet received any injury.

The manufacture of this fragile ware was temporarily suspended by the demise of the male member of the firm, but seems destined to be speedily resumed, as the daughters have now commenced to bear offspring, and one grandchild has already, at four weeks, broken its thigh while being turned in bed, and at nine months has rebroken the thigh from a trifling cause.

These various fractures were treated by myself and numerous other surgeons in Philadelphia, and, as a rule, united speedily. In the femora the new line of fracture was nearly always through the old callus, although the union would seem to be perfectly firm, and an interval of several years had, in some instances, elapsed. The angle of deformity usually increased with each successive break.

Bone-forming food and medicines were given, but their influence could be only inferentially judged.

MEDICAL PROGRESS.

SUPPURATIVE PERITONITIS, WITH RECOVERY.—At a recent meeting of the Clinical Society of London, MR. BARWELL read a case of suppurative peritonitis; opening, washing, and sponging the peritoneum; recovery. The man, aged forty-two, accustomed to drink a good deal, was admitted into Robertson ward, Charing-Cross Hospital, on June 24, 1887. Six days previously he fell

and struck the left lower part of the abdomen, but seemed very little hurt. Five days afterward, he, in stooping, felt severe pain in the lower part of the abdomen; he vomited and passed a little very dark colored urine. (Absence or presence of blood cannot be verified.) He went to bed; his abdomen swelled; he passed very little urine; vomited after, and sometimes without, taking food. 24th. On admission he was placed in a warm bath; while in it he passed what may, he thinks, have amounted to a wineglassful of urine. At 2 P.M. Mr. Barwell found him with pinched, anxious countenance, pulse small, hard, and quick, and temperature 100.4°; dry skin; tongue somewhat coated; vomiting; abdomen slightly tender, save in the left iliac region, much swollen, very tympanitic, quite down to the pubes; tapping it produced a peculiar thrill not like that of flatulence. A No. 12 catheter brought away no urine, even though pressed far back, but the instrument when withdrawn was full of urine deeply stained with blood. 25th. On three occasions ten ounces of urine had been passed, at first with blood, the last sample free from blood, but slightly albuminous, sp. gr. 1.022; temperature 98; pulse 130; abdomen more distended. It being evident that the man had a bad type of acute peritonitis, Mr. Barwell opened the abdomen in the middle line below the umbilicus. A large quantity of gas, not of feculent odor, escaped. No rupture of any viscus was found, but in its lower part the peritoneum contained a quantity of thick pus; there were no adhesions; parts of the intestines were congested, and the membrane was somewhat thickened. Three sponges passed into the lowest part of the cavity were withdrawn covered with tenacious flocculent pus. A smooth-nozzled glass funnel was then deeply introduced, and the part of the cavity washed out with ten pints of distilled water, temperature 99°, bringing away quantities of pus and flocculi. After sponging, a second smaller washing and sponging was directed to the upper part. The abdomen was then sewn close without any drain. The whole operation, including giving the anæsthetic and dressing, lasted an hour. 26th. During the night and day the patient frequently vomited a brown fluid with darker concreta; pulse rather fuller, 110; abdomen scarcely distended, and tender only in immediate neighborhood of wound. Lies flat, save for a small pillow under the knees; says he is quite well, and wants to go home. 28th. The vomiting slowly decreased during the night; the bowels acted rather copiously four times. The vomiting ceased and all symptoms passed rapidly away. The rest of the history is merely that of rapid convalescence, the man being very importunate in requesting to be discharged. In his remarks, Mr. Barwell, referring to a paper by Mr. Hancock, claimed for Charing-Cross Hospital the first conception of the idea of opening the peritoneum for acute peritonitis. He also pointed out that this operation has been performed fourteen times, though the operator has not always known what was the precise nature of the case; and the circumstances have been very various—ulcers or rupture of some part of the intestinal tract, or of an ovarian cyst. He emphasized the impossibility of draining the lower part of the peritoneum through a wound in the front of the abdomen, and advised that no drainage tube should be here inserted immediately after operation, but that, if distention recurred, the lower stitches should be removed and escape permitted. The presence of a tube which cannot in that position act as a drain might be injurious rather than beneficial. In the female, drainage per vaginam would probably be the most valuable treatment.—*Lancet*, November 5, 1887.

Sodium Sulphite in Asthma.—As a modification of Bergeon's proposal to treat asthma by rectal injections of sulphurous acid gas, Battesti has employed

Sodii sulphit.	1 part.
Aquæ	500 parts.

of which a teaspoonful contains about one-sixth of a grain of the salt; this may be given several times daily, in proportion to the tolerance of the patient and severity of the symptoms.—*Revue de Thérapeutique*, November 15, 1887.

Argyriasis from Repeated Cauterization.—In the *Vratch*, No. 33, 1887, p. 635, Dr. M. S. Tolmatcheff, of the Rüza Zemsky Hospital, records a case of chronic argyriasis. The patient, a strong peasant, aged fifty-eight, had accidently pricked the sole of his foot with a nail. On his admission three months later a granuloma was found on the injured spot. This was partly cut away, partly scraped out, the whole denuded surface being subsequently "Paquelinized," and afterward cauterized with solid nitrate of silver. In the course of two months fifteen cauterizations of the kind were performed. The patient then left the Infirmary, but seven months afterward returned with a new and still larger granuloma. The same treatment was again carried out, and fifteen further cauterizations with the solid stick were performed in the course of two months and a half. About the end of that period the man began to lose flesh markedly, and to grow weak. In a few weeks left hemiplegia came on, the face became of a leaden color, with the ecchymoses under the eyelids; profuse brownish-black spots of the size of apple-pips appeared on the cheeks, forehead, neck, abdomen, hands, and feet; there was a bluish line on the gums, the sclerotics became discolored; the mouth was dry and had a bitter taste. Microscopical examination of a piece of the stained skin that was cut out showed that the brownish-black specks were situated mainly in the lower strata of the Malpighian layer, and in the upper ones of the subcutaneous cellular tissue. A month's treatment by tepid baths, iodide of potassium, and Glauber's salt, did not effect any improvement. According to Dr. Tolmatcheff's reckoning, the whole quantity of the silver salt employed in the case during a twelvemonth was not more than one drachm and a half, the average quantity used at a sitting taken at three grains.—*British Medical Journal*, Nov. 12, 1887.

For Blennorrhagia.—Ricord has prescribed with success

℞.—Aquæ rosar.	ʒ 50.
Zinci sulphat.	gr. 15.
Plumbi acetat.	gr. 30.
Tinct. catechu.	
Tinct. opii (Sydenham) . . .	āā ♏ 45.

for injection.

MAURIAC substitutes tannin for acetate of lead, and subnitrate of bismuth for tincture of catechu, and prefers the combination to the classic formula of R cord. —*Revue Générale de Clinique et de Thérapeutique*, November 24, 1887.

THE BACTERIOLOGY OF THE BREATH.—SHABLOVSKY and VARGUNIN, of St. Petersburg, conclude from the examination of expired air, that the reserve air is optically pure; that is, it does not contain any microbes (as Tyndall teaches). The negative results given by this series of experiments demonstrate also that the current of expired air does not carry away and out any microbes from the oral cavity.

But the expired respiration air does invariably contain microbes, though their numerical strength oscillates between wide limits. The average number amounts to 54.18 per cent. of all microbes floating in the surrounding atmosphere. The first moiety of the expired respiration air contains 80.54 per cent., and the other 27.82 per cent. of the atmospheric microbes.

The remaining 45.82 per cent. of the air microörganisms probably settle down for a while on the mucous membrane of the upper respiratory tract, to be subsequently expelled with expectoration, etc. Only a trifling proportion of microörganisms can penetrate into the pulmonary alveolar tissue, since the respiration air itself does not descend deeply into the lungs, the gas changes between it and the reserve and residual air proceeding by way of diffusion.

The following varieties of microbes were found by Dr. Shablovsky in the breath. (*a*) Colonies in the shape of patches of the size of a pin's head, of a rich milk-white color, with a slow growth on the surface of gelatine, the latter remaining unliquefied. They consisted of very mobile cocci and diplococci, measuring 0.5*u* in diameter. (*b*) Lemon-yellow colonies of the size of a hemp seed, with a slow superficial growth without changing gelatine. They consisted of large cocci, measuring about 1*u*, and forming groups of two or four individuals. (J. Eisenberg's yellow sarcina.) (*c*) Yellow-brown colonies, liquefying jelly, the liquefaction area having the shape of a shallow funnel, with irregularly fringed edges. Their growth was more rapid than those of *sub a* and *b*. They consisted of motionless monococci and diplococci, measuring 1*u*. (*d*) White colonies, which in the beginning had the shape of a small, irregularly fringed patch, but subsequently became surrounded by a zone of liquefaction, and then coalesced into a whitish formless mass. Their growth was fairly rapid. They consisted of motionless monococci and diplococci, measuring 0.7*u*. (*e*) Grayish colonies, swiftly spreading over and liquefying the surface of jelly. They were formed by micrococci, measuring 1*u*, chained two or three together, and endowed with a slight swinging and progressive motion. (*f*) Colonies of the bacillus subtilis. (*g* and *h*) Yellow-brown and yellow-white colonies of some yeast fungi. (*i*) Mould fungi (Penicillium glaucum and Aspergillus glaucus).—*Medical Chronicle*, November, 1887.

THE ACTION OF CHROMIUM.—DR. HEINRICH PANUM, of Dorpat, publishes an account of some researches he has made on the physiological action of chromium. The compound which he found to answer best was the double lactate of chromium and sodium. Chromic acid and its salts produced both acute and chronic symptoms, salts of chromic oxide causing only chronic or, at most, subacute forms of poisoning. The chromic acid compounds were found to be a hundred times more toxic than those of chromic oxide. The acute forms of poisoning show themselves by the disturbance of the respiration and of the central nervous system; chronic forms affect the skin and also the mucous membranes when air containing finely divided chromic oxide is allowed to come into contact with them. The heart's action was not directly affected by any of the preparations. The chief as well as the earliest morbid changes appeared in the kidneys under the form of parenchymatous nephritis, followed by the interstitial form: also in the gastro-intestinal tract, where inflammation, ecchymoses, and swollen follicles were found. There were also morbid appearances in the blood and the spleen. In chronic cases the spleen was shrunken and the hepatic parenchyma had a cloudy appearance. Chromium was found to be absorbed both when given hypodermatically and also when administered by means of the gastro-intestinal tract, at least when soluble compounds were employed. Chromic acid preparations were absorbed with great rapidity, both by the skin and the stomach. When in very small quantities chromic acid and its salts were reduced to chromic oxide. The elimination of chromium took place mainly by the kidneys, but also to some extent by the liver and bowels. Death was caused in acute cases by arrest of respiration and disturbance of the central nervous system; in chronic cases by morbid changes in the blood, the kidneys, and the digestive tract. Dr. Pander was unable to find any indication as to the value of chromium as a therapeutic agent.—*Lancet*, November 12, 1887.

A USEFUL APPLICATION DURING TEETHING.—QUINCERAT prescribes

Tannin	ʒ 2.
Tinct. iodin.	gtt. 75.
Potass. iodid.	gr. 15.
Tinc. myrrh.	℥ 75.
Aquæ rosæ.	ʒ 6¼.

A teaspoonful or tablespoonful should be used in a glass of water applied to the gums every morning, and after the mouth is cleansed after feeding.—*Revue de Thérapeutique*, November 1, 1887.

THE RELATION OF THE AIR TO COMMON DISEASES.—HENDERSON concludes an extended article on this subject in the *Glasgow Medical Journal* for October and November, 1887, as follows:

But, again, it is clear that the opinion we form of the etiological significance of organisms, must be greatly influence by the answer to the question which has been discussed in the previous pages—Do common germs normally enter our bodies? If they do, which is the opinion we consider the balance of evidence favors, then it follows that in unhealthy houses a constant excess of these potent particles must pervade the system, and the risk of their growing and multiplying by the aid of comparatively weak determining causes must be

intensified. These conditions will naturally tell most upon young children and delicate persons.

But, even if the other view be correct, that germs do *not* enter the body in health, it is proved that in consequence of slight departures from health, they enter and grow, for they become visible in the tissues. Thus, in any case, organisms *may* grow at very early stages, and in point of fact this is known to occur in some diseases. Now, the appearance of organisms implies that there has been a struggle between the life of the tissues and the living invaders, in which the latter have been victorious, and, therefore, their antagonistic influence upon tissue life must considerably precede the period when they become recognizable in the tissues. These considerations indicate that the influence of organisms may come into play at a very early stage in the genesis of our common diseases.

Antipyrin, in Various Combinations.—Capitan, in the *Revue de Thérapeutique* of November 15, 1887, gives the following useful combinations of antipyrin: In heart diseases—

Sparteine	1 part.
Antipyrin	$\frac{1}{10}$th to $\frac{1}{8}$th part.

It may be mixed with the bromides, as in

Antipyrin	2 to 3 parts.
Potass. bromidi . . .	3 to 4 parts.

In cardiac troubles with defective elimination, Antipyrin, potass. iodid., equal parts, may be given.

Antipyrin may be used in the following gargle:

Aquæ	℥12½
Potass. iodid.	gr. 15.
Tinct. iodin.	gtt. 30.
Antipyrin	gr. 30.

in pharyngitis.

It may be combined with naphthaline, as follows:

Naphthaline.	gr. ¾.
Iodoform	gr. $\frac{3}{10}$.
Tannin	gr. 1½.
Antipyrin	gr. 1½.

This may may be given in pill form, three or four times daily.

This combination is very useful in the treatment of intestinal colic, with catarrhal diarrhœa.

For Acute Tonsillitis.—Lebrun has used to advantage:

Aquæ menth. piper. . . .	30 parts.
Acid. boric.	1 part.

to which should be added 4 parts of an astringent fluid composed of

Benzoin.	1 part.
Alum.	2 parts.
Aquæ	20 parts.

The mixture resulting should be used as a gargle.—*Revue de Thérapeutique*, November 1, 1887.

Ruptured Tubal Pregnancy.—At a recent meeting of the British Gynecological Society Lawson Tait contributed notes of a further group of twelve cases of ruptured tubal pregnancy in which he had performed abdominal section, and tied the bleeding point on account of hemorrhage, which threatened life. He had already reported twenty-three such cases in the columns of the *Journal*. All of these cases had recovered except the first; of the last twelve cases eleven had recovered and one died. Every one of these operations had been performed under conditions of the utmost gravity, where life was threatened; and he had no hesitation in saying that nearly, if not quite, all these lives would have been sacrificed but for prompt interference. The first case had failed because he knew not what to do. He was too long over the operation and wasted time securing bleeding points as they arose, instead of rapidly separating all adhesions, regardless of the bleeding points, down to the base of the tumor, which was the broad ligament. A ligature placed round that and secured at once arrested hemorrhage; not a drop was ever lost afterward. In the other fatal cases the hemorrhage had already progressed too far; the patient was almost dead at the time of operation. She made a great struggle to get through, and lived five days, but then succumbed. He regretted not having employed transfusion in this case.

Mr. Lawson Tait said the diagnosis was not always possible, but it might be made correctly in probably about eighty-five per cent. of the cases. The real clew to the nature of the case was a history of sterility for some considerable time, the arrest of menstruation for weeks or even months and a sudden access of pain and collapse, with repetitions of these attacks. The operation was simplicity itself. "Open the abdomen, go at once to the seat of rupture—that is, the broad ligament—and tie it, for until you come to the ligament itself, the tissue is always so rotten and friable that any attempt to arrest the bleeding in any other way cannot succeed; then clear out the débris, and put in a drainage-tube." Of course, amputation of the ligatured mass was a matter of necessity; nobody would ever dream of leaving such a thing to putrefy in the abdomen. As to the proposal to destroy the life of the fœtus, and arrest the growth of the ovum, he had never been called to these cases until such a proposal was too late. He had never seen them until the period of rupture. Hemorrhage was then the danger with which he was concerned. Further, there was abundant proof that hemorrhage might go on after the fœtus had been dead for weeks. He doubted if a diagnosis could be made before the period of rupture. If it were possible with an electrolytic needle to piece the body of the fœtus, it might kill it, but would it kill the placenta? There was no question that in these cases the placenta continued to grow after the fœtus was dead.

All these thirty-five cases produced within the short period of seven years, confirmed the statement of Dr. Blundell that the condition was by no means uncommon, and that in many instances of women dying from internal hemorrhage, the real cause of their death was never ascertained. Thanks to the progressive emancipation of the professional mind from the thraldom of authority within the last ten years, we had now the means, if we had a reasonable time in which to act, to save at least the great majority of these cases.—*British Medical Journal*, November 12, 1887.

A USEFUL PURGATIVE FOR DIABETICS.—SEE has used

R.—Sulphur. sublimat., potass. tartrat. (pulv.), magnesiæ calcinat.; equal parts.

Dose one teaspoonful several times daily.—*Revue de Thérapeutique*, November 15, 1887.

GLOSSAL TUBERCULOSIS.—DR. L. V. ORLOFF, of the Princess Helena Pavlovna Clinical Institute, gives an account in a St. Petersburg medical journal of a case of tubercular ulceration of the tongue, the nature of which, though there were slight signs of pulmonary phthisis, was definitely decided by microscopical and bacteriological examination. The importance of this latter means of diagnosis is pointed out by Dr. Orloff. Tubercular ulceration of the tongue, when primary, as it sometimes is, might in this way, if diagnosticated and treated, perhaps be prevented from being followed up by the pulmonary affection. Some experiments were made in order to test the possibility of direct communicability by inoculation of rabbits' tongues with the secretion from the ulcer, but only negative results were obtained.—*Lancet*, November 12, 1887.

MUSTARD PAPER.—An Italian pharmacist gives the following formula for a convenient mustard paper:

Gutta percha (in scraps) . . .	4 parts.
Bisulphide of carbon	100 parts.
Ground mustard (freed from oil by pressure)	q. s.

The rubber is to be dissolved in the carbon; strong paper is to be dipped in the fluid, the mustard sprinkled upon it, and a roller passed over it to secure the firm adherence of the mustard. The paper may then be cut in convenient sizes. Heat is not needed in applying it. Moisture is generally sufficient to secure its adherence. —*Journal de Médecine*, November 20, 1887.

HYSTERIA AMONG SOLDIERS.—DR. JANSSEN gives an account, in the *Weekblad van het Nederlandisch Tijdschrift voor Geneeskunde*, of several cases of hysteria and hystero-epilepsy occurring amongst Dutch soldiers. In one of the latter class of cases occurring in a man of twenty-one, who had come of a highly neurotic family, where there were several attacks during the day characterized by semi-consciousness, extremely rapid respiration, abdominal tenderness, coldness of the extremities, with cold sweating, pulsation of the carotids and other arteries, opisthotonos, and convulsive spasm of the extremities, Dr. Janssen found that the attacks could be arrested by exerting firm and deep pressure with the closed hand on the left iliac region, or by a powerful induced current. The surface of the body was anæsthetic, and if the skin were lightly pricked with a pin, not only did the man not cry out, but no blood appeared. Various anti-epileptic and anti-hysterical remedies were tried without benefit. Different metals were applied to the surface of the forearm, but the only one which produced any effect was silver, which left a red mark. This induced Dr. Janssen to prescribe nitrate of silver for internal use, and this produced a great improvement in the patient. In another there was aphonia and aphasia, the lad being able to understand what was said to him, and to read and write, but not to speak—an example of Charcot's hysterical mutism. Treatment produced no effect on this patient, and he had to be discharged from the army.—*British Medical Journal*, November 12, 1887.

PRIMARY CARCINOMA OF THE ORGAN OF HEARING; RECOVERY.—LUCAE, of Berlin, reports in the *Therapeutische Monatshefte* for November, 1887, the case of a man, aged thirty-one years, who suffered from a growth in the meatus of the right ear, which so nearly filled the aperture as to render examination of the more distant portions of the ear impossible. Microscopic examination of portions removed gave every reason to believe it carcinoma.

The treatment consisted in douches of chlorine water, and the application, by insufflation, three times weekly, of equal parts of pulv. herb. sabin, and alum. ust.

Gradual improvement followed. Three years after his first examination the foreign growth had disappeared. Seven years after he presented himself for treatment, complete recovery, including restored function, ensued.

CHRONIC MYOCARDITIS.—DR. NEISHTAB, of Ekaterinoslavl, in some articles in recent numbers of the *Russkaia Meditsina*, details some cases of cardiac disease he has met with, which show that chronic disease of the heart muscle, myocarditis chronica, or amyoatrophia cordis, may exist quite independently of endocarditis or pericarditis. This myocarditis scarcely ever affects the whole of the heart's muscular wall, but confines itself to the right or the left side. When the diseased condition is advanced, it gives rise to definite physical signs, by which it is easily diagnosticated. These are want of rhythm and a remarkable diminution in the secretion of the urine, which, however, is of a normal character. The subjective sensations which accompany this condition are similar to those due to stenocardia.—*British Medical Journal*, November 12, 1887.

SIMON'S TREATMENT OF WHOOPING-COUGH.—In the first stage of the disease he orders

Tinct. belladonn., tinct. aconit., aquæ lauro-cerasi, equal parts, proportionate to the child's age.

After the convulsive stage has become established he employs an emetic once or twice each week, and alters his first prescription as follows:

Tinct. belladonn., tinct. aconit., equal parts, of which a carefully proportioned dose should be given morning and evening.

If food is rejected it should be repeated immediately after vomiting, when coffee may be also given with advantage. The nourishment and strength of the patient should be conserved in every possible way.—*Les Nouveaux Remèdes*, November 24, 1887.

URETHRAL ENDOSCOPY.—In the *Boston Medical and Surgical Journal* of December 1, 1887, DR. ALLEN describes Leiter's (Vienna) perfected instruments, and reports five cases of urethral disease in which endoscopy proved convenient and advantageous in treatment.

ANIMAL TANNIN.—We learn from the *Chemical News* that tannin may be obtained from the bodies of weevils, which infest granaries. 500 parts of weevils yield 15 parts of tannin.

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SATURDAY, DECEMBER 24, 1887.

THE CROWN PRINCE'S CASE.

The Medical News received this week the following reassuring cablegram from Sir Morell Mackenzie, at San Remo, concerning the condition of the German Crown Prince:

"A growth the size of a split pea exists on the left ventricular band of the Crown Prince's throat, but it does not look malignant. The October growth is much diminished in size, and the ulcer on it has cicatrized. The swelling of the glands has quite gone, and there is no œdema."

It is to be hoped that this new growth which Sir Morell Mackenzie distinctly states does not look malignant, is situated *upon* the tissues and not *in* them, and that it may be simply what is known as a papilloma or warty growth, similar to that removed last June from the vocal band of the same side. The description of the present condition of the October growth seems to justify the opinion that it has been an abscess tumor and not a malignant growth.

The cablegram is on the whole quite reassuring, and presents no indication to modify the favorable points in the case expressed in our issue of December 10th.

THE TREATMENT OF TYPHOID FEVER.

In the issues of The Medical News of December 3d, 10th, and 17th, we have presented our readers with an outline of the modes of treatment in typhoid fever pursued at twelve of the chief hospitals of this country. There is a remarkable uniformity of opinion that the essential details in ordinary cases consist in hygiene, diet, and nursing. This has been one of the great gains of the century in the management of fever, and in this country the profession can never be sufficiently grateful to those courageous men, Nathan Smith, Jacob Bigelow, and Austin Flint, who, more than any others, taught us to make a knowledge of the natural history of a disease the starting-point of our medication. The possibility of arresting the course is only hinted at by one writer, but the so-called abortion of the disease is extremely doubtful, and at one clinic cases terminate spontaneously, which at another would be held to be striking illustrations of arrest by medication.

Not a suggestion is made as to specific treatment, the goal toward which, in this class of diseases, we are all working; but, except in one direction, the outlook is not very encouraging. The development of the poison in the intestine naturally suggests measures directed to the limitation of its growth, or the neutralization of its products, and the administration, as intestinal disinfectants, of naphthalin, thymol, and, perhaps, carbolic acid and iodine is an attempt to meet this indication. Experimental work may lead to the discovery of some reagent which can influence materially the growth of the typhoid bacillus, and not at the same time prove injurious to its host.

Apart from the accidents of perforation, hemorrhage, and a few complications, the important questions dealt with by the writers are how to combat the fever and how to resist the progressive asthenia. Hydrotherapy does not seem to have made much headway at American clinics, and even the recent statistics of Brand do not appear to have made a convert. Repeated spongings, with an occasional cold pack, are regarded as sufficient. Properly performed, the former measure is one of the most satisfactory which we possess for reducing fever. We should like to insist on the great importance of the cold pack, or bath, in those ataxic cases in which from the outset the nervous system is profoundly involved.

Of medicinal agents for reducing temperature, quinine, so long a favorite, has been replaced by antipyrin and antifebrin, both of which act promptly and safely. From fatal cases in which these heat-reducing agents have acted well, we have learned the lesson that it is not so much the pyrexia as the whole infectious process, of which the fever is but a feature, which constitutes the real danger, and with this we too often fight a losing battle. It is the misfortune of these recently introduced antipyretics that they do not seem to modify the course of the disease, even when the temperature has been persistently reduced by them. The use of alcohol is recommended by all the writers, and we have, as yet,

no substitute for it in the progressive asthenia of the disease. We expected a more decided expression of opinion as to the value of digitalis, spartein, and ergot, in the failing heart of fever. The administration of the first named remedy is popular with many practitioners whenever the pulse becomes weak and rapid. Ergot and strychnia are of great service also, and in the so-called cardiac cases many French writers prefer them to alcohol.

We appear to have reached a stage in the treatment of these specific fevers at which we may look back with satisfaction at what has been accomplished, and with hope look forward to a future full of bright possibilities. So far, the determination of specific organisms in connection with particular diseases has done less than might have been anticipated in modifying our therapeutics, but on the rapid progress of organic chemistry we can confidently expect not only a clearer knowledge of the manner in which these bodies act, but also combinations from the laboratory, which, if they cannot control the growth, may at least neutralize or modify the action of the substance which they produce.

THE NEW ORLEANS QUARANTINE STATION.

The report of the Committee of the College of Physicians of Philadelphia concerning the state of our quarantine defences has deservedly attracted wide attention and general commendation. In so far as the Committee confined themselves to discussion of the condition of affairs at the ports of New York, Philadelphia, and Baltimore, to which their personal investigations were limited, one of our valued southern exchanges, the *New Orleans Medical and Surgical Journal*, expresses its approbation in terms not less hearty than those coming from other quarters.

The Committee, however, in putting the question, "To what extent do the existing arrangements at the ports of New York, Philadelphia, and Baltimore fulfil the requirements for an efficient maritime quarantine against cholera?" added the following:

"[We speak of these ports only because circumstances did not permit of more extended personal investigations, and there is no reason to believe, from the published official descriptions, that the conditions of other ports of entry upon our Atlantic and Gulf coasts are in any respect superior.]"

The parenthetical classification of the quarantine system of Louisiana, with others not specifically mentioned, as, in a general way, not surpassing that existing at New York, has called forth, on the part of our esteemed friends of the Crescent City, a spirited protest, in which they say: "It is a great pity that so excellent a report should be marred by a grievous sin of commission. In inserting the passage quoted in their report, the members of the Committee proclaim their ignorance of the great strides that have been made in this locality in maritime sanitation." They admit that the Committee have evidently performed all of their duties conscientiously, for even where they make a grievous error they believe they are correct, since they base their statement upon 'public official descriptions.'" Besides, in their address to the medical societies of the United States, is the following: "According to the official description of Dr. Joseph Holt, President of the State Board of Health of Louisiana, it would appear that the quarantine in the Mississippi is, in respect of establishment, fully up to the requirements of modern science." Doubtless the Committee would have been equally complimentary to the Mississippi quarantine below New Orleans in their report, had the above official description been published before the presentation of that report. Of the "published official descriptions" to which the Committee referred, it seemed proper that they should form their opinions principally from the latest official comparative report upon the various quarantine stations of the Atlantic and Gulf Coast accessible to them, namely, that of 1886, by Dr. John H. Rauch, Secretary of the Illinois State Board of Health. This was all the more natural, since that report could in no manner be suspected of reflecting the influence of local pride or commercial interests.

In that report it is true that Dr. Rauch, whilst speaking of the Louisiana quarantine, says: "I am, therefore, enabled to endorse from personal observation the claim made that this is the most thorough and vigorous system of sanitary quarantine which has ever been enforced for the protection of a port from the introduction of foreign contagion into this country—if not in the world." But, in his concluding remarks concerning the New York quarantine, in the same report he uses the following equally commendatory language: "With reference to the exclusion of cholera and smallpox, the quarantine plant and facilities of the port of New York *are unrivalled* (italics ours), the printed regulations judicious, and with proper vigilance the service should suffice to prevent either of these diseases from obtaining access to the country through this avenue."

Undoubtedly, so far as quarantine against yellow fever is concerned, the system devised and perfected by Dr. Joseph Holt for the protection of the port of New Orleans against imported diseases, appears to be admirable. The methods and facilities for disinfection at the upper station are, as far as we know, unequalled anywhere in the world, and the associated establishments lower down the river are valuable adjuncts in efforts to keep disease at a distance.

But, however praiseworthy modes and means of disinfection may be at any quarantine station where

large numbers of immigrants constantly or may from time to time arrive, the absence there of sufficiently large and convenient buildings for the landing and separation into small groups, isolated from each other, of all the ship's inhabitants during the period of detention is, especially in quarantine against cholera, a most serious defect. Whilst it may be justly claimed that New Orleans is better prepared to disinfect a ship, crew, and passengers at the upper station, than is even New York, nothwithstanding the latter's "unrivalled plant and facilities," yet, with respect to means for the speedy termination of a ship's cholera epidemic among five or six hundred immigrants, we are still unquestionably of the opinion that, at least in this one most essential modern requirement for the efficient handling of cholera in quarantine, the plant and facilities at New York, imperfect as they undoubtedly are, should still be regarded as unrivalled at the present time in this country.

A port which undertakes to protect the country against the occasional invasion of Asiatic cholera, should provide all the essential means of rapidly discovering and destroying the contagion. Thorough disinfection is only one of these, whilst debarkation, and segregation into small isolated groups, properly housed and fed, under the strictest sanitary surroundings, are nowadays regarded as no less essential for the successful and prompt extinguishment of the germs of this disease. Had the excellent system devised by Dr. Holt been planned a year or two subsequent to an experience with cholera, instead of ten years after the last epidemic, no doubt his great knowledge and ingenuity would have enabled him to develop a scheme of very perfect defence against that disease, as well as yellow fever.

While the Louisiana system of quarantine certainly has many strong features, especially in the proper handling of yellow fever, yet it is by no means free from weak points, and, when confronted by cholera, these should justly be regarded as a source of danger to the country. The interchange between Dr. Rauch and Dr. Holt of telegrams on December 9th of this year, concerning the arrival at New Orleans, on December 4th, and the landing there three days later of 614 emigrants, brought by the steamship "Elysia," from Palermo, seems to emphasize this danger.

In his last telegram, Dr. Rauch "regrets that the 'Elysia' and her passengers were not detained longer." (Can "Elysia" be a misprint for "Alesia"?) He also takes occasion to remind the quarantine authorities that "twice has cholera been introduced into this country *via* New Orleans at this season of the year," and to make the very pertinent inquiry, "Why was the 'Elysia' sent to New Orleans instead of to New York?"

Has the tide of immigration from the recently infected districts of Sicily and Southern Italy been turned from New York on account of the unpleasant experience of the "Alesia" and the "Brittania" in that port; or, has it set in, for the moment, toward New Orleans because quarantine is known to be inactive there during the winter season?

Whatever the reason may be, we cannot but regard the circumstance as contributing additional weight to the considerations which should prompt the country to demand the establishment of an efficient and uniform direction by the National Government of quarantine at the seaboard. Our health laws should be such that the commercial interests of rival ports should be allowed neither to suffer nor profit through a transference from one American port to another of those dangers to the public health which immigrants bring to our shores. During commercial activity there should be no season in which the quarantine safeguards are not in a state of constant readiness; and the treatment of immigrants should be neither more nor less exacting at one port than at another.

That the official declaration by the Italian Government of the complete and sudden extinguishment of cholera in that country so soon after its widespread prevalence in regions where the climate is mild even in the mid of winter, should be received with due allowance. Past experience, as well as late United States consular reports of the existence of cholera in Terralba, are ample to warn us. The recurrence of cholera in South America, even before the warm season there has quite returned, should be looked upon as significant of possible danger in the spring from that quarter also.

The present situation appears, therefore, highly opportune for the earnest and unbiassed consideration by the physicians of all parts of the United States, of the serious matters embodied in the report on the existing defects of quarantine along the Atlantic and Gulf Coasts, and set forth in the address accompanying it, which the Committee of the College of Physicians of Philadelphia has been authorized to communicate to the medical societies of the United States.

REMOVAL OF A LARGE BRAIN TUMOR.

AT St. Mary's Hospital, Philadelphia, on Dec. 15th, DR. W. W. KEEN removed a tumor from the left side of the brain of a man aged twenty-six years. The patient was injured by a fall at three years of age. At twenty-three years of age he suffered from epilepsy with right-sided deviation of the head and eyes, followed by paralysis of the right arm and leg and aphasia. The initial symptoms of the epileptic fits pointed to the centre for conjugate deviation of the eyes, as discovered by vivisection,

and largely upon this was based the accurate diagnosis and surgical treatment.

The tumor measured 2 by 2⅞ inches, and was 1¾ inches thick. It extended from the fissure of Sylvius into the first frontal convolution, and from near the fissure of Rolando into the bases of the three frontal convolutions, and weighed 3 ounces and 49 grains. We learn that the patient is doing very well; so far the highest temperature having been only 100.8°, and already primary union of the flaps has followed, except at the drainage openings.

On December 12th, Dr. L. Ernest Neale, of Baltimore, Demonstrator of Obstetrics in the University of Maryland, performed the Sänger-Cæsarean section upon a patient at the Free Lying-in Hospital of the University of Maryland. The case was one of dystocia from contracted pelvis. The mother died about the third day, but the child is still living.

The Methodist Episcopal Hospital, of Brooklyn, was dedicated December 15th, with religious exercises by Bishop Hurst, of Buffalo, and others of the clergy and laity. The medical address was delivered by Dr. Horatio C. Wood, of Philadelphia. There is but one pavilion, with about seventy beds, completed at present, but the foundations are laid for accommodations for three times that number when the finances are at command for the completion of the buildings. The total cost, when finished, will have been a million and a quarter of dollars. George I. Seney, Esq., by whose name this institution is most commonly called, founded it liberally about six years ago, and thought to carry the project through entirely upon his own shoulders, but being a railroad magnate whose properties suffered a decline in value, the fulfilment of his generous plans was of necessity postponed. His gifts amounted to over $400,000; others have contributed nearly half as much more. It is stated that this is the only Methodist Episcopal institution of the kind in the world, and there can be no doubt as to its eventual success and full endowment, and that too, before many years have gone by. The beds of the "Seney" Hospital are, for the most part, free and will not be restricted to the sick and injured of any denomination.

The Medico-Legal Society, of New York City, held its annual meeting on December 14th, and the election resulted in retaining the officers of last year in their positions; with the exception that the Vice-Presidency fell to Dr. W. G. Stevenson in place of the late Dr. Carnochan. A lively debate occurred on the jurisprudence of inebriety, ex-Judge Noah Davis presiding; and alcohol received so many hard thrusts, that when the time for dinner came the banqueters paid heed to the teaching given them and wine was most sparingly ordered.

George Wiedler, the slayer of Dr. Duggan, of Brooklyn, has been sentenced to twenty years' imprisonment at hard labor. This is the full penalty for the crime of manslaughter, of which he was found guilty by the jury. But, for "good behavior," as it is called, the murderer may receive a reduction of punishment to thirteen years at Sing Sing. The judge, when sentencing Wiedler, showed very clearly that he considered the trial a miscarriage of justice. He said, "I firmly believe that if you had been dealt with according to the testimony, you would now be standing here for sentence for murder in the first degree, and not for manslaughter." This criminal has saved his neck through the exertions of his lawyers, who did not hesitate to besmirch the good name of the dead physician.

REVIEWS.

A Short Manual of Surgical Operations. By Arthur E. J. Barker, F.R.C.S., Surgeon to University College Hospital; Assistant Professor of Clinical Surgery and Teacher of Practical Surgery in University College, London. 12mo, pp. vi. 423. London and New York: Longmans, Green & Co., 1887.

We can speak well of this book. In modest compass it furnishes a fair exhibit of the set operations of modern surgery, while it also gives directions for the performance of some that have pretty much had their day. Very properly more space is given to the newer operations, but even here Mr. Barker claims to have put severe restraint upon himself so as to give a condensed account of the steps of the operations. As we have indicated, the result is very satisfactory. For while the book cannot take the place of more elaborate and extended treatises, nor, indeed, does it aim at so doing, the well-read surgeon, who is called upon to do an operation for the first time, will find in Mr. Barker's chapters just such a summary of operative procedures as is necessary to refresh his memory, and bring the salient and essential points of the operation into clear relief. Our author has had large experience with operative surgery, and by the clearness and simplicity of his style shows that he writes of a familiar subject; but while he is sufficiently decided, there is entirely absent from the book anything of unpleasant dogmatism. Indeed, we could have borne with a little more of criticism, and a fuller expression of the author's own estimate of certain operations which have attracted notice of late years. The chapter upon abdominal surgery is very full and very explicit, as is fitting in view of the well directed efforts which have made that region the field of the most daring and most successful exploits of modern operative surgery. Mr. Barker apologizes for the illustrations, most of which have been drawn by himself, but even if not very artistic they serve well to make plain his meaning, and are valuable

helps to a correct understanding of the text. Those illustrating brain surgery represent well the existing state of our knowledge as applied to the most recent practice. Altogether, the book will be found valuable for its accuracy, its brevity, and the discriminating character of its contents.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, December 5, 1887.

The President, D. Hayes Agnew, M.D., in the Chair.

Dr. Charles B. Nancrede presented the

SPECIMENS FROM A CASE OF LITTRÈ HERNIA.

During the latter part of June, of this year, a case was brought to the Episcopal Hospital, nearly moribund, in which symptoms of strangulation had been present for four days. They had not been especially acute. There had been some vomiting, but no distinctly fecal matter had been brought up. The constipation was not complete. One or two efforts at taxis had been made, but were said to have been unsuccessful. In the right groin a very small tense tumor was present. Being under the impression that this was one of the forms of hernia in which only a portion of the calibre of the bowel had been caught, he determined to try to relieve the strangulation. He cut down until he came to what seemed to be the sac. On opening it a little blood-stained serum escaped. He next reached what looked like omentum. During his manipulations the tumor suddenly became softer, and about a drachm of thick pus welled up. He made a free opening, and found in the neck of the sac a mass resembling in color and appearance the skin of a grape. This came away on the slightest touch, and he searched for an opening in the intestine, but could discover none. He then concluded that, for some cause, the peritoneal coat had sloughed off. The man died five or six hours afterward, neither benefited nor injured by the operation.

At the post-mortem the intestines were found covered everywhere with a layer of false membrane, with pockets of pus. At one portion, near the internal ring, was found a place where the false membrane was absent over a circular space, corresponding to the portion of false membrane which he had found in the ring. The portion of gut nipped in the ring appeared to have been only about one-fourth of its circumference. While this variety, although uncommon, was still quite often met with, Dr. Nancrede believed that his case was the first where a piece of *gangrenous false membrane* had been stripped off and left in the neck of the sac, thus simulating gangrene of the bowel.

Dr. William Hunt said that he was present at the post-mortem of a similar case in which a portion of the gut became strangulated in the femoral ring. There were symptoms of obstruction, but the condition was not recognized during life.

Dr. D. Hayes Agnew had seen the autopsy of one case in which the portion of the bowel strangulated was not larger than the little finger. In this case the symptoms were not very acute.

Dr. John M. Barton, a few years ago, saw a case of this kind in collapse. There were symptoms of strangulation, and he searched all the openings without finding any suspicious fulness. At the autopsy a portion of ecchymosed intestine, one and a quarter inches in length, and one-half inch in breadth, was found in the inguinal ring.

Dr. De Forest Willard had operated in one case in which the extent of the hernia was slightly more marked than had been described. The outer wall of the intestine was involved to the extent of one and one-half inches, while the inner wall was just pinched. There were symptoms of strangulation, but no tumor could be found. He performed laparotomy in order to ascertain the cause. The patient, however, died in the course of three days.

Dr. Morton reported the history of a case in which he had performed

LAPAROTOMY FOR PERFORATION OF THE BOWEL IN TYPHOID FEVER.

(See page 729.)

Dr. William Hunt said that there could not be a more perfect description of his own case than the history which Dr. Morton had given of his patient. He had been sick for three weeks with mild typhoid fever. An error in diet was followed by intense pain in the abdomen, and sudden collapse. He was treated for fourteen days on the Graves and Stokes plan—that is, opium to the full extent. A blister was placed over the abdomen, and he was nourished with liquids. Following this he had phlebitis, abscess, and other complications, and was two years in recovering. This is not the history of ordinary local peritonitis. Dr. Gerhard, Dr. William Pepper, Sr., and Dr. George B. Wood were confident that perforation had taken place.

Dr. W. W. Keen said that the only case of typhoid fever in which he had been confronted with the question of abdominal section, and the first published case, he thinks, in which this question was raised, was one seen about two years ago with Dr. James C. Wilson. The only thing that deterred them from operating was the question of diagnosis. Dr. Morton had said that the time for operation is the moment that perforation has taken place, but the difficulty is to tell positively whether or not perforation has taken place. In the case alluded to, there was sufficient doubt to lead to delay. The next day the patient being better the operation was deferred and finally was not performed, the child recovering. He thought that there is no doubt as to the propriety of the operation when the diagnosis is reasonably well made out. The sequelæ of typhoid fever which require surgical interference are not very few. A good many cases of necrosis of the larynx occur during convalescence from typhoid fever, and operation in these cases could not materially add to the dangers, for nearly every one of them dies if it is not done.

Dr. Nancrede said that some time ago he was asked by a colleague to see a case in which it was thought that perforation had occurred. He was not satisfied that such was the case, and even if there had been, the condition of the patient contraindicated operation. The autopsy showed that there was no perforation. Some time later he was asked to see another case in which it was be-

lieved that perforation had occurred. The attending physician thought that he detected crepitus in the abdominal walls. He examined the case three times, but could not find this, and the patient recovered.

Dr. Barton asked Dr. Morton to state the points on which he based the diagnosis in his case.

Dr. Morton said that the points were as follows: The patient who had a mild typhoid, soon after eating most improper food, was suddenly seized with severe localized pain, a violent chill, and a temperature of 104.5°; the pain continued and soon extended all over the abdomen; these symptoms in connection with a pulse of 146 convinced him that perforation had taken place.

Dr. S. W. Gross said that it is not so much a question of mistakes in diagnosis as it is whether or not we shall operate in a certain class of cases. In one like that just described, he should not hesitate, as the signs conclusively indicate perforation, and being a walking case, the powers of life had not been greatly debilitated. In the majority of cases of typhoid fever the operation would be out of the question. He would, however, criticise the technique of the operation as described. The insertion of Lembert sutures for the closure of the perforation was eminently proper, but, from a pathological standpoint, he considered the treatment of the second lesion improper. Ulceration was still going on, and the bringing together of the serous surfaces would certainly not arrest it. If he were to meet with an ulcer which had almost perforated the gut, he would excise it, and approximate the edges of the wound.

Dr. Morton said that in the treatment of the ulcer referred to, it would have been difficult to excise it without materially interfering with the calibre of the bowel. The ulcer had reached the peritoneal coat, and he felt better satisfied to turn it in, rather than leave it unprotected; and he could only say that if he again found the same condition, he would pursue the same plan. He would not be willing to close up an abdomen, knowing that there was simply peritoneum between the contents of the bowel and the abdominal cavity, which would probably be followed by a perforation, and necessitate a repetition of the operation.

Dr. Agnew said that he was that day called to see a case of supposed perforation in a young man in the fourth week of convalescence. Twenty-four hours before he saw him he had been seized with a sudden pain in the right iliac fossa. He fell back in a state of exhaustion and fainted. This was followed by great tenderness and abdominal distention. When he saw him he was better. The distention was not so great, and the pulse had improved. He believed that in that case there was no perforation. The time that has elapsed would have considerable weight in the diagnosis. He did not believe that we shall ever accomplish much by operation in cases of perforation from typhoid ulcers.

Dr. Nancrede related the history of a case in which he performed

LAPAROTOMY FOR EXTRACTION OF CALCULUS.

The lateral incision was two inches above the pubes. The first deep stitch was introduced one and three-fourths inches above the pubes. There was some difficulty in getting the needle, and a superficial stitch was introduced one and three-eighths inches above the pubes. The abdominal walls were unusually thick, and the needle was an ordinary glover's. A glass drainage tube was put in two and one-half inches from the pubes, and carried down into Douglas's cul-de-sac. The ligatures on the nodules were tied as close to the uterus as could be done with safety. The patient was catheterized after etherization. After the next catheterization, some three hours after the completion of the operation, about three ounces of bloody urine containing tube-casts were removed, showing that there must have been very little in the bladder at the time of operation. In forty-eight hours the blood disappeared. The drainage tube was taken out on the fourth day, and the lower stitches on the sixth day. On the twelfth day she turned on her side, and shortly afterward, on attempting to urinate, urine escaped freely through the track of the drainage tube. She refused to be catheterized, and went all night passing urine only twice, when there was some leakage through the opening. The patient is doing well; no urine escaping through the abdominal opening, owing to the use of the retention catheter. He had not been able to account satisfactorily for this complication. Was it possible, he asked, that the superficial stitch passed into the bladder wall? Did he injure a pervious urachus? In tying the broad ligaments, did he draw in a portion of the wall of the bladder and ligate it? He was inclined to the urachus view, as he thinks it to have been impossible that he could pass a superficial stitch inclosing three-fourths of an inch of tissue with an ordinary straight needle, through an abdominal wall fully one inch thick, and pick up an empty bladder one and one-fourth inches above the pubes. If he did, this should be a warning to operators not to approach even within two inches of the pubes with their incisions. [The fistula has since closed, and nothing but temporary inconvenience has resulted.]

Dr. Keen called attention to the fact that when empty the female bladder has a "Y" shape. Frozen sections show that one arm of the "Y" extends some distance up the anterior wall of the abdomen. In a case of fibroid tumor, in which he performed laparotomy for the removal of the appendages, he found the bladder adherent to the abdominal wall. He had to extend the incision as high as the umbilicus before he got above the bladder.

Dr. Hunt could not help thinking that there was some peculiarity in Dr. Nancrede's case. What practical anatomist has, in making an ordinary cut of the abdomen from the symphysis to the umbilicus, ever opened the bladder?

Dr. S. W. Gross exhibited a specimen of interest which showed one of the disadvantages of the use of the silk ligature for tying the pedicle of an ovarian tumor. Dr. Martin, of Berlin, removed an ovarian cyst and secured the pedicle with a silk ligature. Some time later the patient presented symptoms of calculus, and, on examination, a large phosphatic stone was found, and crushed by Dr. Max Nitze. The nucleus was several feet of silk thread which had ulcerated into the bladder. The lady then came to this country. She consulted him about the first of last month on account of a return of the vesical symptoms, when he detected a tone.

Prior to the removal of the stone he threw an ounce of a four per cent. solution of cocaine into the bladder, and applied the same solution to the urethra on cotton.

He then rapidly dilated the urethra, carried in a small pair of lithotomy forceps and removed this stone. It is phosphatic, weighs eleven grains, and has formed around a bit of silk ligature, about one inch of which projected from the stone.

This case is interesting from another standpoint, as it is the only case in which he has not had more or less incontinence after free dilatation of the urethra. The urine was bloody for twenty-four hours. The operation was done on Sunday, and on Wednesday the patient left the hospital.

Dr. Keen said that two years ago he dilated the urethra for the purpose of exploration and had considerable difficulty in introducing his forefinger. The procedure was followed by retention requiring the use of the catheter for four days.

Dr. Morton said that a woman aged twenty-eight years was recently admitted to the Pennsylvania Hospital with the history, that three years ago she had induced an abortion by the introduction of a hairpin into the uterus. Three months ago she attempted the same procedure. The hairpin, however, slipped from her grasp and entered the uterus. The abortion was produced, but the hairpin remained. He dilated the neck of the uterus and was able to remove the pin, which had given rise to considerable endometritis.

Dr. Agnew did not think that, as a rule, extraction of calculi through the urethra causes incontinence. In one case, after he had gotten the stone into the urethra, he found that it was larger than he had supposed, but as he could not readily push it back into the bladder, he brought it through the urethra. It was one and one-half inches in diameter. This woman recovered without incontinence.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 15, 1887.

The President, A. Jacobi, M.D., in the Chair.

Dr. T. Herring Burchard read a paper on

the modern treatment in strangulated hernia.

He said that, encouraged by the remarkable successes obtained in the treatment of non-strangulated hernia by the methods suggested by Banks, Czerny, and others, surgeons had latterly paid special attention to the radical cure operation, as applied to cases in which strangulation existed, and the results achieved had been most gratifying. The general principles upon which the operation is based, as a legitimate surgical procedure, are :

First. A more general recognition by the profession of the value of time in the earlier stages of the strangulation, so that surgical relief could now generally be rendered before pathological changes, which were irremediable, had taken place in the tissues.

Second. Modern herniotomy implied an abandonment of those uncertain and pernicious methods and practices which, founded on a false pathology, had sought to relieve the strangulation by producing a condition of systemic relaxation. It was now recognized that spasm, as a causative agent in the production of strangulation, never exists.

Third. Modern herniotomy restricted the employment of taxis to within limits that were rational and safe. Necessary as properly directed taxis is in the reduction of hernia, by its indiscriminate and reckless use irreparable damage had not infrequently been done the intestine ; and he could not but feel that it had been a misfortune to designate by a special appellation the manipulations employed in reducing hernia, since the practice had exaggerated their importance in the treatment, and been a fruitful source of abuse.

Fourth. Modern herniotomy implied the early resort to a cutting operation. Many lives had to be sacrificed before the profession seemed to realize that the gangrene and ulceration, the fecal extravasation and stercoraceous vomiting, the peritonitis and collapse were not necessary and integral factors of the primary condition of strangulation, but secondary complications developing later on in the progress of the disease, the legitimate result of delay in affording relief to the original constriction. If, however, the strangulation were relieved before inflammation of the gut or adjacent tissues had supervened, these grave dangers could be avoided.

Dr. Burchard's practice is, if possible, to operate on every case of strangulated hernia in which gently applied taxis, under anæsthesia, preceded, as a rule, by the application of ice, does not yield reasonable expectations of success within about one hour after positive symptoms of strangulation have presented themselves. In his opinion nothing is gained by delay, while everything is risked.

Fifth. Modern herniotomy is an antiseptic operation, demanding the fullest application of Listerian principles.

Sixth. Modern herniotomy requires in the disposition of the hernial sac the finest impartiality of judgment. Certain cases require incision, while in others the strangulation can be readily reduced without opening the sac; so that it would be folly thus to complicate the operation and expose the patient to unnecessary danger.

Seventh. Since Mitchell Banks, of Liverpool, had urged the possibility and expediency of perfecting the old operation of kelotomy, so as to add to the operation done for the relief of strangulation, the inestimable advantages of an operation for radical cure, the strongest possible encouragement had been given for the attainment of an early, thorough, and perfected operation.

Regarding the special treatment of strangulated hernia, Dr. Burchard said that he had nothing novel to add to the excellent recommendations that had been published on the subject. His experience had led him to the adoption of a plan of treatment substantially as follows :

First. Pain is allayed, vomiting quieted, and nervous tranquillity secured by the hypodermatic administration of morphia with atropia.

Second. As soon as practicable a careful examination is made of the hernial tumor, any attempt at reduction being studiously avoided.

Third. If evidences of local inflammation are present, or if there is much swelling of the tumor, a poultice of linseed meal and cracked ice, or the ice coil, is at once applied. These are dispensed with if the patient is feeble or the strangulation is of long standing.

Fourth. A stimulating enema of turpentine and oil, or a larger emollient one of thin flaxseed tea, is admin-

sidered, and the rectum thoroughly washed out. Should it be required, the patient is catheterized. If the tumor is still unreduced, no attempt at taxis is made until

Next. The patient is anæsthetized, permission having first been obtained to proceed with the operation in case taxis should fail.

At this point Dr. Burchard said he wished to emphasize the advantages to be gained by putting the patient under full anæsthesia (preferably by chloroform), covering the tumor with a rather large and heavy ice poultice, elevating the lower extremities, and keeping the hands entirely off for a period of from thirty to forty minutes. In a number of instances thus treated he had the satisfaction of seeing the tumor, almost imperceptibly, slip back of itself, even after prolonged taxis had been unsuccessfully employed. As to just how long the attempt at reduction by taxis is justifiable, no absolute rule can be laid down. To the practised touch a moment is sometimes sufficient to determine the possibility of a successful reduction. In other cases it is advisable that the trial should be prolonged for twenty, or even thirty minutes, provided always that only the gentlest manipulations are employed.

Taxis having proved unsuccessful, the operation should at once be undertaken. By careful dissection the sac should be fully exposed; when, if the strangulation be of recent occurrence, and the sac free from inflammation and of normal appearance, an effort may be made to secure its return by gentle taxis into the cavity of the abdomen. Should adhesions bind down the sac, they may be broken up if not too extensive; precautions being taken that all bleeding has been effectually checked before the sac is returned. If constricting bands girdle the body of the sac and prevent its return, they should, if possible, be divided. Adhesions around the neck of the sac must be treated with great deliberation. Having pointed out the complications and dangers to which such adhesions might give rise, he mentioned that serous effusion within the sac might be safely gotten rid of by puncturing the sac with a capillary hypodermatic needle.

If, now, the sac could not be readily reduced, he went on to say, it should be carefully opened. Unprejudiced surgeons, he thought, are at present agreed that in all those cases where it would be safe to replace the hernia by simple taxis, if that were possible, the same thing might be done after restraining adhesions of the sac or constricting bands around its neck had been divided by the knife. But in those cases in which the symptoms are suggestive of an aggravated condition of the bowel, and on account of which it would be dangerous to attempt to reduce it by taxis, it is necessary to open the sac. The sac having been opened, the stricture should be sought for and divided.

Dr. Burchard then alluded to some points of practical interest in connection with the return of the gut. One of these was in regard to cases of deep congestion. How far the vitality of the bowel is consistent with a change of color, drying of the secretions, emphysematous crackling, and foul odor, is a difficult matter to determine. He had seen two cases in the practice of Dr. Eric Ludlum, R. Wood in which gut that was decidedly gangrenous was replaced and in both instances with the most favorable results. In one case of his own, where a deep furrow marked the seat of the stricture, and where the gut itself was of a dark maroon shade, the condition of the gut did not warrant its reposition for nearly three hours after the operation; whereas in another case, of more prolonged strangulation, with grave constitutional symptoms (the condition of the gut being almost identical, with the exception of the furrow or groove), the circulation was restored in one-fourth the time. He said he could not feel that we are justified in returning strangulated intestine until it gives some evidence of reanimation; while it is perfectly possible to keep it enveloped in moist flannels and rubber tissue for several hours. In cases of ulceration it is sometimes advisable to practise partial excision before returning the intestine, and in some instances the condition of the gut does not warrant this until several hours after the operation. Extensive perforations and lacerations occurring in herniated bowel necessitate the formation of an artificial anus.

Treatment of adhesions.—If acute, and simply binding down the body of the sac, they may be gently broken down. If they surround the neck of the sac, binding the intestine to the upper end of the sac, or the intestine to the cord, or to an undescended testis, it is necessary to accomplish the separation with the greatest possible gentleness and circumspection, on account of the extreme friability of the tissues. Chronic adhesions may be divided with more boldness, provided no traction is made on the inflamed intestine. In all cases the intestine, both above or below the strictured portion, should be carefully examined after the operation.

The radical cure—The modern operation finds its greatest advantage in the radical cure it accomplishes, by the complete closure of the sac and permanent obliteration of the hernial canal; and it has been successfully performed upon all forms of hernia, inguinal, femoral, and umbilical, with equally satisfactory results.

In the present light of hernial surgery he thought that no operation for strangulated hernia could be said to be properly performed without the final closure of the hernial canal. By this practice five decided advantages are gained:

First. Complete isolation of the peritoneal cavity, and its permanent closure.

Second. Permanent closure of the patulous orifice through which the gut escaped.

Third. Shortening of an abnormally elongated hernial canal.

Fourth. Prevention of septic percolation into the cavity of the abdomen in case suppuration should ensue.

Fifth. The inestimable advantages that would result to the patient from a permanent cure.

In the performance of the operation, the clinical requirements are, first, a safe and satisfactory disposition of the sac; and, second, a total obliteration of the hernial rings, and an accurate coaptation of the sides of the canal.

Disposal of the sac.—The sac may be dealt with in one of several ways:

First. It may be reduced within the abdominal cavity, and the canal then obliterated.

Second. It may be left within the canal (especially when firm adhesions prevent its safe return), and the superficial tissues and the skin are firmly approximated over it.

Third. It may be ligatured, the hernial investment amputated, and the stump returned.

Fourth. It may be ligatured and amputated, and then invaginated in the canal.

Fifth. It may be drawn up upon itself and fixed as a bulwark against the internal ring, as in Macewen's operation.

Sixth. The abdominal wall may be divided longitudinally and parallel to the pillars, and the sac then woven into the fibrous structure.

DR. JOSEPH D. BRYANT said that he thought the first method should be dismissed from consideration, except in very acute hernia, on account of the danger of causing adhesions with their attendant pain and discomfort, or of lighting up peritonitis. The objection to the second method was that with the sac remaining *in situ*, complete obliteration of the canal could not be effectually secured. A canal thus treated became exceedingly sensitive, and a truss could scarcely be worn. Between the remaining methods a choice could sometimes be made only after mature deliberation.

DR. BURCHARD said he had operated in nine cases of strangulated hernia, in which he had been enabled to carry out the operation in all its details. Eight of these had recovered, and one developed delirium tremens on the second day, and died from this cause on the fourth. Having alluded to a number of interesting points in connection with these cases, he spoke, in conclusion, of two practical matters which suggested themselves: (1) In cases of stercoraceous vomiting and collapse, nothing had equalled in his experience the use of hot water employed as a stomach douche, as practised by Tait. A long, soft rubber tube was passed into the stomach, and a stream of hot water very gently injected in a continuous current. By this means the stomach was not only thoroughly washed of its fecal contents, but the best possible stimulant in cases of hernial collapse was furnished by hot water so employed. (2) As a factor in the production of acute general peritonitis concealed hernias in exceptional localities are apt to be overlooked. He had met with two instances of this kind in his own experience; one being a case of inguinal bubonocele of a direct variety, and the other one of concealed femoral hernia.

DR. R. F. WEIR made some remarks on the question

HOW SHOULD THE SAC BE TREATED IN HERNIOTOMY?

He said that Dr. Burchard had covered the ground so completely that but little remained to be said. Like Dr. Burchard, he thought that the surgeon should be guided by the circumstances of each individual case, and he did not advocate any one method of procedure to the exclusion of others. He illustrated by diagrams the operations for radical cure of Macewen and Czerny, and went on to say that while the radical operation unquestionably marked an improvement in this branch of surgery, it could not as yet be regarded as a perfected operation. Having given some statistics showing the comparative frequency of relapses, he said, in conclusion, that surgeons were everywhere practising the operation, and he feared too freely; that is, too freely in non-strangulated hernia.

DR. W. B. DE GARMO read a paper on

THE CONSERVATIVE TREATMENT OF IRREDUCIBLE AND INCARCERATED HERNIA.

He said, in opening, that his paper did not relate in any sense to strangulated hernia. He would present the histories of a number of cases which were intended to show that the two opposite opinions concerning operative interference and non-interference were both wrong. He would advocate operation in certain cases which could not be reduced, but he thought it unwise to operate in all cases. The first case which he related was one of irreducible inguinal hernia of ten years' standing. The first day he devoted one hour to making taxis (by which term he wished to be understood as meaning certain very gentle manipulations, which were quite different from the taxis usually made use of), but with apparently very little effect. By the fourth day, however, he succeeded in reducing the hernia by this means. At first a truss could be worn for only a short time; but the tolerance of it gradually increased. The second case was also of ten years' standing, and the hernial tumor was of the size of a fœtal head at full term. The hernia was complicated, as was frequently the case, with a piece of omentum, and this proved to be irreducible; but it afterward disappeared under the pressure of the truss. After the hernia was first reduced the truss could not be worn in the standing position for a time.

The third case was characterized with attacks of colic in connection with the hernia. The hernia was gradually reduced by gentle manipulations; after which a truss was worn with comfort, and by the end of a year the patient thought himself cured. As the result of jumping out of a carriage, however, the hernia became strangulated. An operation was then performed, and he made a rapid recovery. Dr. De Garmo narrated some other cases, and said that of the ten, there were seven reductions and two failures, while one case was abandoned on account of the patient having diabetes.

He then went on to speak more particularly of the manner of reducing these supposed irreducible hernias into reducible ones. The first thing was to see that the mass was freely movable in the sac, and then use compression, rather than ordinary taxis. In the second place, the tumor is to be separated from the vicinity of the testicle, if it were situated in the scrotum. In other words, it is to be perseveringly stripped from its lower adhesions and gradually worked upward; no force whatever being used. The complete separation of the omentum, so frequently forming a part of the mass, is accomplished before the reduction proper is commenced. In some cases Dr. De Garmo is in the habit of directing self-applied taxis, practised daily. After the reduction the hernial sac usually remained; but if the hernia is kept properly in place by a well-fitting truss this generally disappeared in the course of time. Taxis is to be practised from fifteen to forty-five minutes at a time, and repeated once a day. None of his patients had been confined to bed for more than one week.

In those cases in which it was found impossible to reduce the hernia the tumor was compressed by a truss, and a strong suspensory support was also employed. It was important, however, to distinguish the contents of the tumor. If only omentum was present no trouble

could result, but if bowel were present the truss would cause more or less discomfort, and would be likely to lead to strangulation.

DR. A. G. GERSTER made some remarks on

STRANGULATED HERNIA IN CHILDREN.

This he said is a very rare condition in children, and he had met with but four instances of it in his experience. There is nothing peculiar in the character of the strangulation in such subjects, and he would direct attention only to a point of difference in the treatment required, as compared with that in adults. This was on account of the difficulty of preventing infection of the wound in small children. In most instances the hernia is congenital, and the neck of the sac is usually not very wide. On account of the danger of infection he advocated an open treatment of the external wound. Primary union does not occur after suturing, and, therefore, after securing occlusion of the sac and the abdominal opening he packs the open wound with iodoform gauze, and thus secures an aseptic condition.

Dr. Gerster then proceeded to relate the history of the four cases that he had seen. In one of them, a child two years and three months old, an error of diagnosis was made. The tumor was at first mistaken for hydrocele; but the true nature of the case was determined by the hypodermatic syringe, which brought away intestinal matter. It was also found to be a strangulated hernia; but as no urgent symptoms were present no active interference was made at this time. By the next day, however, all the ordinary symptoms of strangulated hernia had manifested themselves, and the radical operation was performed. During this a slight wound was made in the gut, on account of the adhesions present, and this was sewed up with the Lembert suture. In another of the cases strangulation of the hernia occurred four separate times in connection with eclamptic attacks, to which the child was subject. It was always successfully reduced under the use of chloroform; but when the accident appeared the fifth time it was determined to perform the radical operation, after which there was no further trouble from the hernia.

DR. V. P. GIBNEY said that he should like to make some protest against the strong condemnation of taxis which Dr. Burchard had expressed, as he had seen a number of aggravated cases of strangulated hernia reduced under taxis as employed by the average practitioner. As regards strangulated hernia in children, he did not recall a single case in all his experience in which the strangulation could not be reduced with the aid of chloroform. Furthermore, if it could be reduced, it could be cured simply by the wearing of a suitable truss. As the operation was a more serious one than in adults he thought, therefore, that operative interference should never be resorted to in children; and this became still less necessary in the light of the successful results accomplished by the conservative methods advocated by Dr. De Garmo.

DR. WEIR said that he had had two cases in children like Dr. Gerster's, and both had proved fatal. In two other cases he had successfully reduced the hernia by resorting to the expedient of inserting the finger into the rectum, and thus combining internal with external pressure.

DR. DE GARMO said that he had met with only temporary incarceration in children. No bad results had ever occurred, and he had never found it necessary to resort to taxis in such cases. In reply to a question from Dr. Weir as to just what he meant by the term taxis, he said that the gradual working of the tumor loose by passing the fingers around it was not taxis proper, but rather pressure. By taxis he meant the manipulation of the neck of the sac, but employed in such a way as to avoid pressure backward against the abdominal rings, which was apt to be resorted to in taxis as commonly practised.

CORRESPONDENCE.

IS THE QUESTION OF SILK OR SILVER LIGATURES STILL BEFORE US?

To the Editor of THE MEDICAL NEWS,

SIR: In the number of THE NEWS for December 3, 1887, I see a letter from Dr. Martin, of Ann Arbor, advocating the use of "braided silk suture in lacerated cervix and perineum," and I must beg of you the permission of adding a few lines upon the subject.

A year or so ago I called attention to the advantages of catgut in three cases—in a short correspondence in these same columns. Since then catgut has become quite popular through the efforts of Martin, who lauds the juniper preparation, and I have continued the use of the bichloride gut, which I esteem as highly now, as I did then, and my object in addressing you now is to call a halt in the discussion as to the merits of the various sutures in gynecological work.

I have tried them all faithfully, and I have come to the conclusion that *it matters not*, in the great mass of cases, *what the material be, provided it be* of sufficient strength and—*thoroughly antiseptic*. I do not object to the whale or kangaroo-tail tendon, but practically we must limit ourselves to silver, silk, or catgut.

Silver is more expensive and cannot be handled with the same rapidity, hence it is rarely used, and we are brought down to silk and catgut. Catgut possesses the great advantage over silk, that the surgeon need not trouble himself about the removal of the sutures; it possesses no disadvantage, is inferior in no way to silk, unless it be desirable that the suture remain longer than ten days. The catgut prepared in corrosive sublimate and alcohol, or in juniper oil, is as agreeable and convenient to handle as silk, and the surgeon will soon learn by experience for how many days he can trust his suture; the time varies with the thickness of the gut, method of preparation, and location of suture.

I prefer catgut for the reason that I need not trouble myself or patient with the removal of sutures, and that I can resort to buried sutures without change of material, but I claim no other advantage for this material. Silk, silver, kangaroo-tail tendon, horsehair, or any other antiseptic material is just as good.

As a matter of convenience, I have now used catgut continuously for over two years, externally and internally, on cervix, vagina, perineum, and other integument. I have even in one instance used catgut exclusively in an ovariotomy, for ligatures and sutures.

Indifferent as is the kind of material, so is the kind of suture with which we unite vaginal or perineal structures, provided the suture be drawn sufficiently tense, and firmly knotted, and we no longer trouble ourselves about the kind of knot with which the suture is tied—provided it holds. I might add, that in the hard tissues of the cervix, or, more correctly, in the tissues of an indurated cervix, the interrupted suture, as ordinarily used, is preferable.

Whilst all that Dr. Martin says as to the relative value of silk and silver sutures in cervix and perineum is correct, I find fault with the complete omission of catgut, and with any discussion regarding that material. I shall never forget the lesson I learned in a smoking-room on an express train, with my honored friend Dr. Parvin, when he told me, years ago, of a labor case with ruptured perineum, far out in the country, and no silver wire on hand; he took a hair from his horse's tail and sewed up the perineum, did not tie the legs, and scored a perfect success!

I could not but think of this case whenever I heard the relative merits of silk and silver discussed. Practice has confirmed the inference I drew, and I believe that gynecologists who are in the habit of operating, and operate frequently, will say with me, that, as a rule, in the usual gynecological operations *one suture is as good as another*, and *convenience alone should guide us* in the choice of material.

Frequently it is a great advantage if the annoying procedure of removal can be dispensed with, thus when cervical and perineal operations are performed in one sitting, or in an operation for cystocele and for rectocele in combination with a cervix or a perineum; in these cases catgut is to be decidedly preferred, but, as a rule, the operator can suit his convenience, the result is not dependent upon material or kind of suture. I do not object to the preferences of individual operators, and do not laud catgut[1] as superior to silk in anything but convenience. I claim no superiority for it, but neither do I admit the superiority of any other material in general for sutures; individuals have their preference, the result of habit and long continued experience, and now and then under circumstances certain materials are unquestionably indicated, but with the recent progress in surgery, with the development of antiseptic technique, these questions, formerly so important, as to material for suture, kind of suture, and kind of knot, have been blended in that of surgical cleanliness—antisepsis—this is the requisite. I may, perhaps, add, sufficient strength to permit of a perfect coaptation of the parts until union has taken place.

Several years ago, when I first took this position, I repeatedly used silk, silver, horsehair, silkworm gut, and whale tendon indiscriminately in one and the same operation, stitching with some, tying with others, to demonstrate to students of how little importance the material was, but for over two years I have used catgut only and prefer it, as a matter of convenience; let this then, and not superiority determine our choice—as there is no superiority.

Respectfully yours,

GEORGE J. ENGELMANN.

ST. LOUIS, December 5, 1887.

[1] I refer, of course, to the catgut of modern antiseptic surgery, a very different article from old time catgut.

THE EYESIGHT OF SCHOOL CHILDREN.

To the Editor of THE MEDICAL NEWS,

SIR: A notice in the Medical Progress columns of your journal of this date, as to a new apparatus devised by Prof. Cohn, for testing the eyesight of school-children, contains the comment that this is a matter which is scarcely attended to at all in this country. This would indicate an opinion that relatively less importance is accorded to this question by oculists here than abroad. As this is a somewhat prevalent mistake, a correction of it, and of several kindred errors may be in place.

Of about 140 investigations of the eyes in the schools thus far recorded, 21 have been made in the United States (more than in Great Britain, France, and Scandinavia combined); and while none of these are inferior in value to many of the often-quoted German studies, some are among the best of the kind. The earliest, Callan's study of negro pupils in New York (*American Journal Medical Sciences*, April, 1875), has few equals anywhere. But comparisons, though tempting, are dangerous.

So far as any special apparatus is required to supplement the test-letters of Snellen, it has been furnished by Green, Dennett, and others; and Prof. Cohn's card, which has long been in the hands of some of us, is simply a set of the E like "haken," which Snellen gave us long ago. There has been no trouble from lack of efficient means for such examinations, were the opportunities only afforded.

The American investigations have been comparatively unnoticed for several reasons: First, they have been scattered about in school reports, society transactions, and our countless journals, in a way that has made them extremely difficult to find, even for one who has for years been seeking them. Then the public interest in them is less. We have no compulsory military service, and our Government has not been forced to recognize the number of conscripts who have to be rejected because of defective vision or high degrees of near-sight—a point of no small concern to the military authorities of the Continent. So too, in our educational methods, we have little of the rigid grading of the German schools, which enforces some ten or twelve years of school before the University can be entered—each year crowded with an amount of work that casts our public school cramming in the shade. The increase in the percentage of nearsight from the lower to the higher classes, which sends the young Germans out more than half of them myopic before they go to the universities, must needs challenge the attention of educators and of the general public. The educated classes are, themselves, the victims; all professional men having to pass through this preliminary training—so that the facts are patent to the whole body of medical men, however much familiarity may have lessened the force of their lesson. Then, the status of the investigators on the Continent, often semi-official, has lent weight to their utterances and has aided in disseminating their results.

Doubtless the European investigators have had many difficulties in pursuing their studies, and are subjected to much criticism; but in America has there not been too often an unfortunate jealousy in the medical profes-

sion which has looked askance at all such examinations, lest they should bring the examiner into undue public notice? The most scrupulous conduct on the part of the investigator will not free him from the imputation of sordid motives in his undertaking; and the publication of results or the enforcing of their teachings will almost always arouse antagonism and invidious criticism. Among parents and educators there has been an indisposition "to have notions put into the children's heads that there is anything wrong with their eyes." The teachers have often all that they can do to carry out the curriculum entrusted to them, and naturally deprecate any investigations which may add hygienic duties to their tasks. Many of them are already laboring in the most self-sacrificing way to save their pupils from damage in school; but the majority ignore the matter in most of its aspects. The parents are too often inclined to resent as an invasion of their American liberties any investigation of their children's eyes, and oppose it as vigorously as the railway employés do the color-tests. All remote advantage is wholly overshadowed by present inconvenience, real or fancied. Under these conditions a self-respecting student of the subject must be zealous indeed to carry out such a piece of work; and not a few who have done so have withheld their results from publication.

There are among us dozens of competent men who, looking for no other reward than the right to utilize the scientific results of their studies for the instruction of themselves and others, would investigate in all our schools this crying need of our civilization, if only the opportunity were afforded them. The amount of labor involved is known only to those who have experienced it; but the importance of the data which remain to be obtained would nerve many to the task. Every such study will be of value to the school where it is made and to the individuals examined; and if regularly repeated at intervals, doubly so; while if well done its value will be much more enduring and far-reaching. A careful study of each investigation thus far made, has shown in most of them imperfections, grave, indeed, but readily avoidable; and vast as is the work already done, much remains to be elucidated by future examinations. The evil, though less crying among us than in Germany, is none the less real and menacing here, as numerous studies show. A great step would be gained if only a card of Snellen's letters or any other suitable test were to be placed in every school-room where the children could test their own vision and compare it with our standard; and for this purpose Dennett's card (*Transactions of American Ophthalmological Society*, 1886) is probably one of the best. But is it not time that the medical profession, at least, if not the general public, should be aroused to the importance of the subject and to a belief that it can be investigated, as it deserves to be, in a purely public spirit?

It is doubtless true that insufficient attention is given to the subject in this country, as you suggest, but I would protest that the fault is not to be ascribed to the oculists, who have already, in face of many obstacles, done excellent work, and stand prepared to continue it whenever their services are desired.

Very respectfully yours,

B. ALEX. RANDALL.

PHILADELPHIA, December 10, 1887.

NEWS ITEMS.

THE BOSTON MEDICAL LIBRARY ASSOCIATION has authorized its Executive Committee to purchase land on St. Botolph Street, on which at some time in the future to erect a library building. In order to secure the new lot it has been necessary to place a mortgage upon the newly purchased land, and also upon the present library building.

DR. THOMAS F. WOOD, editor of the *North Carolina Medical Journal*, is recovering from aneurism. His treatment has embraced his confinement to his bed for over a year.

MR. LAWSON TAIT has been appointed to a recently established Chair of Gynecology in Queen's College, Birmingham.

THE COLLECTIVE INVESTIGATION OF SYPHILIS is about to be undertaken by a committee of the various specialists interested in this study, in the German hospitals.

COLLECTIVE INVESTIGATION OF SCARLET FEVER.—The success which followed the collective investigation regarding the practical value of "swill milk," instituted by *Science* in June last, has led that journal to begin, in its issue of December 16, 1887, a similar investigation regarding scarlatina, as met by physicians in general practice. A list of inquiries has been prepared which covers the recently raised questions regarding scarlatinal contagion, and the replies of physicians, to these inquiries, in various portions of the United States will be published from time to time.

THE TOWN COUNCIL OF WONSACKET, RHODE ISLAND, recently held a conference with the physicians of the town to devise the best means of restricting scarlatina. Other municipalities could imitate the example with profit.

THE CROWN PRINCE OF GERMANY.—According to the *Lancet* of Dec. 10th, the physicians in attendance upon the Crown Prince are giving a trial to the treatment suggested by Dr. Freund, of Vienna, and based on his analyses of the blood of patients suffering from cancer which showed an excess of sugar. By a rigid exclusion of sugar from the diet, and the substitution of saccharin, it is attempted to reduce the amount of sugar in the blood, and by that means to prevent the malignant growth. Dr. Freund's views have not won general acceptance, and one fact which is strongly adverse to them is that the subjects of diabetes mellitus are not specially liable to be attacked by cancer. We are glad to learn that there has been an improvement noted in the Crown Prince's condition during the last fortnight, and we hope it may continue. The period of improvement corresponds with the adoption of Freund's treatment, and very naturally this has excited hopes that a further continuance of it may be attended with still greater success.

BLACK UPON GREEN, FOR OCULAR HYGIENE.—Several of the French railway companies and other public bodies have resolved on having their printing done on

green instead of white paper. The reason for the alteration is, that they believe the combination of white paper with black characters endangers the eyesight of their workpeople. Black on green has always been recognized as a good combination, and many railway tickets are so printed.

THE CHROTOGRAPH is a pencil manufactured in Germany for writing on the skin. It is made in various colors, and affords legible writing, which can be easily removed without the use of water. It is designed for the use of physicians, to make memoranda upon their patients.

VENTILATION OF SICK BEDS.—DR. WYMAN, of Cambridge, Mass., describes his method in a recent number of the *Lancet*, as follows:

In the Cambridge (Mass.) Hospital there is an arrangement for the ventilation of the beds not generally known; it is so effective that I wish to describe it. Beneath each bed is a ventilating tube of about eight inches diameter, fifty square inches area, leading directly through the floor to a foul-air trunk, beneath which it communicates with the main ventilating chimney. About 2000 cubic feet of air an hour is thus drawn from beneath each bed. This ventilating tube is connected with the bed above by a four-inch pipe of tinned plate, with a proper cover and joints, which passes around the side or foot of the bed and into it beneath the clothing. This pipe is lengthened with one of the same size of pasteboard or other substance, a non-conductor of heat, reaching to any part of the bed. By this simple means foul air is removed as fast as formed, the bed kept free from odor, and the patient's body is no longer surrounded with contaminating gases. As the air presses inward through the porous bed-clothing none escapes into the ward. Further, a two-inch flexible pipe is adjusted to that just described, and slipped over the hollow handle of the bed-pan when in use, carrying off odor from that also. In the same hospital similar means connect the beds in the private wards with the chimney of an ordinary fireplace, up which the pipe reaches about four feet to insure a good draught with a moderate fire; the part in the chimney is of black iron. The advantages of such an arrangement in cases of sloughs, foul ulcers, cancers, and in fevers with frequent fecal dejections, are obvious. It may be supposed that the passage of air through the bed would cool it too much. Practically it does not; probably the quantity of air passing is about the same as in beds ordinarily at the same temperature of the room, but in a different direction.

AN INDIAN'S BRAIN.—The College of Physicians of Vienna were greatly interested, at a recent session, by the examination of the brain of an Indian. They found the cerebrum inferior to the cerebellum in development, and in the former a tendency to the formation of a convolution in the frontal lobe, which is characteristic of the horse and ox.

A RED CROSS PRIZE.—This Society has offered a prize of $1400 for the best design for a portable hospital.

THE DESTRUCTION OF ANIMALS BY INTENTIONAL INOCULATION WITH TUBERCULOSIS.—From the *British Medical Journal* of December 3, 1887, we learn that the rabbits introduced into Australia a generation ago have increased at such a rate that the Government of New South Wales has offered a prize of £25,000 to any one who will discover a means of checking their further multiplication. M. Pasteur has come forward with a suggestion which belongs to the same order as one made some years ago and already carried into practice on several runs, without, so far as has yet been announced, any very great success. The older proposal was to inoculate a number of rabbits with tuberculosis, and to turn them loose to infect the rest; M. Pasteur's plan is to use the virus of the so-called fowl cholera in the same way. The disease can be communicated to fowls by giving them food sprinkled with cultivation fluids in which the bacterium of fowl cholera has grown; and he assumes that the disease could be communicated to rabbits, which are very susceptible to it when inoculated in the same way. He also assumes that it would spread from rabbit to rabbit by infection through the droppings.

CREMATION OF GARBAGE.—The cremation of garbage is a question of great interest to all cities at the present moment. It is, as yet, an experiment, but one upon which several cities are working with pardonable enthusiasm. Montreal and Wheeling, W. Va., are, on this continent, the pioneers in this movement. At Montreal, Dr. La Berge, the medical health officer, reports that the garbage is consumed in a perfectly satisfactory manner by the Mann furnace under a contract made by the year. There is no evidence as to the actual cost of the consumption to the contractor, as he, very properly, refuses to disclose the amount which he makes on his contract. At Wheeling, where the Smith furnace is used, we believe, reports vary as to its utility. It is evident that the municipal management of it is not the best which could be given it. At Des Moines, Ia., a small Engle furnace is in experimental use, and is working very satisfactorily. At Pittsburg, Pa., a Rider furnace has been in use about two weeks, which is too short a time to allow any judgment to be made as to its efficacy. In Chicago a Mann furnace is being constructed. It will soon be completed, and will be managed entirely by our very competent health department, and under such management it is very evident that we shall know its absolute cost and merits. Dr. De Wolf, health commissioner, promises to read a paper on the subject of garbage cremation at the next meeting of the American Public Health Association, in Milwaukee, in 1888, and we may rest assured it will furnish the facts which municipalities most wish to know.—*Sanitary News*, November 19, 1887.

THE DETECTION OF TRICHINÆ.—If the suspected meat be dissolved in pepsin and hydrochloric acid, and allowed to settle in a conical glass, the sediment may be removed by a pipette, and examined microscopically at the convenience of the observer.

MECHANICAL VENTILATION AND MICROORGANISMS.—HALDANE, in a recent paper read before the Sanitary Institute of Great Britain, reports the results of his investigations on the air of school-rooms, as follows:

Wishing to test more thoroughly the results of mechanical ventilation, we made a number of comparative

experiments on different days in the same room. The circumstances were as nearly as possible the same, except that on some days the mechanical ventilation was in operation, and on other days not, open windows, etc., being used instead. We found, to our surprise, that, whereas the carbonic acid present in the air was increased from 12.6 to 18.6 volumes with the mechanical ventilation not in operation, the average number of microörganisms remained almost exactly the same. Even when the mechanical ventilation was kept off for a week, this had no distinct effect in increasing the number of microörganisms. These anomalous results did not lead us to doubt the effects of mechanical ventilation in diminishing the number of microörganisms in air, as we found the number very small even in rooms where every other condition except the ventilation seemed to favor a large number. We were, therefore, forced to conclude that while the ventilation at the time is the decisive factor in influencing the amount of the gaseous impurities, it is not, other things being equal, the habitual state of the ventilation which influences the microörganisms. This led us to inquire into a number of points regarding the sources of the microörganisms.

It had previously been proved by Tyndall and others, that physical disturbances of any kind, such as those caused by the presence of human beings, have a great effect in disseminating microörganisms in air, and that air left perfectly still gradually deposits its microorganisms. We naturally, at first, expected that varying amounts of physical disturbance would very much obscure other differences. It turned out, however, that this is not the case. Although the influence of difference in physical disturbance is well marked, under ordinary circumstances other influences have a much greater effect, as we shall see.

That the microörganisms do not come from the breath, but are on the contrary filtered off by respiration, we showed by means of some experiments, the details of which need not be described here (see *Phil. Trans.*, vol. 178, B. page 92). That they do not come in any large number directly from the clothes or skin of the person present in a room, was shown by a number of observations made in the two chemical lecture rooms. Even during a course of crowded popular lectures there was found to be an average of only four microörganisms per litre, as compared with an average of about three when the room had remained empty. Nor did the number rise beyond six per litre when the room was left unventilated during the lecture, and the carbonic acid rose to nearly 40 volumes per 10,000. This observation alone shows strikingly, I think, that the carbonic acid is no measure of the number of microorganisms in the air of a room.

The microörganisms thus do not come to any large extent from the bodies of the persons present at the time. Nor do they come from the outside air, which is comparatively free from microörganisms during winter, as shown both by our own experiments and by the more recent and systematic ones of Dr. Percy Frankland. We must, therefore, conclude that they come from the floor and other parts of the room itself. If this is really so, the state of a room as regards cleanliness ought to have an effect on the number of microörganisms. This we found to be actually the case.—*Sanitary News*, November 12, 1887.

JAMBUL.—According to the *Pharmaceutical Record* (November 15, 1887), jambul is the fruit of the Indian syzigium jambul (Eugenia jambulanum), and is given for diabetes, in doses of five grains, three or four times daily.

THE VENTILATION OF SLEEPING ROOMS.—DR. BROWN-SÉQUARD, who has been preaching that bad ventilation of sleeping rooms and poor and monotonous food are great causes of phthisis, discussed the subject at the last meeting of the Academy of Sciences, Paris, taking many of his examples from England. Wherever population is dense and sleeping rooms ill-aired or overcrowded, consumption prevails. A room in which a consumptive person sleeps is reeking with contagion if the air he exhales is not carried off. Dr. Brown-Séquard exhibited an apparatus of his invention. A reversed funnel the shape of a lamp-shade is placed at the end of a tube, so arranged that, when it is placed beside the bed, the reversed funnel will be above the sleeper, and draw up the air he breathes. The other end runs into the chimney of the room. If there is none, it is taken through a heating apparatus to an airhole. In either case the contagion is destroyed by heat, after the manner suggested a few years ago by Dr. Burdon Sanderson and others.—*British Medical Journ.*, December 3, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM DECEMBER 13 TO DECEMBER 19, 1887.

HARRIS, H. S. T., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort McIntosh to Camp Pena, Colorado, Texas.—*S. O. 283, Department of Texas*, December 12, 1887.

CLENDENIN, PAUL, *First Lieutenant and Assistant Surgeon.*—Ordered from Camp Pena, Colorado, Texas, to Fort McIntosh, Texas.—*S. O. 283, Department of Texas*, December 12, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING DECEMBER 19, 1887.

MURRAY, R. D., *Surgeon.*—Granted leave of absence for fourteen days, December 8, 1887.

GASSAWAY, J. M., *Surgeon.*—Granted leave of absence for fifteen days, to take effect when relieved, December 17, 1887.

IRWIN, FAIRFAX, *Surgeon.*—Relieved from duty as Acting Chief Clerk, Office of Supervising Surgeon-General, and to await orders.

CARRINGTON, P. M., *Assistant Surgeon.*—Ordered to examination for promotion, December 14, 1887.

BROOKS, S. D., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, to take effect when relieved, December 15, 1887.

MCINTOSH, W. P., *Assistant Surgeon.*—To proceed to Wilmington, N. C., for temporary duty, December 13, 1887.

MAGRUDER, G. M., *Assistant Surgeon.*—Granted leave of absence for twenty-one days, December 19, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 17, 1887.

HUDSON, A., *Medical Inspector.*—Ordered to the "Trenton."

BATES, N. L., *Medical Inspector.*—Detached from the "Trenton," and placed on waiting orders.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

A CLINICAL ANALYSIS OF SIXTY-FOUR CASES OF POISONING BY LEAD CHROMATE (CHROME YELLOW), USED AS A CAKE-DYE.[1]

BY DAVID DENISON STEWART, M.D.,

CHIEF OF THE MEDICAL CLINIC IN THE JEFFERSON MEDICAL COLLEGE; ASSISTANT PHYSICIAN TO ST. CHRISTOPHER'S HOSPITAL FOR CHILDREN.

IN presenting to the profession through THE MEDICAL NEWS of June 18, 1887, some hastily prepared notes on several cases of lead-poisoning, whose source I had traced to the use of lead chromate as a food adulteration, I was unaware of the rather extensive use of this substance as a food color and of the wide prevalence of lead-poisoning through this means. The present paper is an analysis of the symptoms of sixty-four of these cases, fifty-seven of which I have personally carefully examined. All of them had consumed, for a considerable period, large quantities of the cakes containing the lead chromate and all showed some unmistakable signs of plumbism, which, by diligent inquiry, I was unable to trace to other sources. I have excluded some cases which I have no doubt are due to lead, presenting none of what are ordinarily regarded as the essential symptoms of plumbism, such as the blue line on the gums, colic with constipation, arthralgia, etc., time not permitting examining the urine for the metal. I prefer to deal here almost solely with the class presenting the ordinary symptoms more or less pronounced, concerning which, there can be no question as to diagnosis. I have found that there is a much larger class with symptoms more or less obscure and not especially suggestive of plumbism, but whose condition is, nevertheless, due to the action of lead and deserves most careful consideration and study. They make a far more instructive group than these here considered, since, because of the obscurity of their symptoms, serious mistakes in diagnosis are constantly being made.

I have met a number of these cases recently, which, though I believe there can be no doubt as to the nature and source of the symptoms, I prefer not to discuss as a group until I can, at the same time, present the results of the urine analysis which Dr. Leffmann is now carrying out. In the present group are a few, for example, one of the cases of encephalopathy (Mrs. V. G.), that approach those that present so-called "classical" symptoms of lead-poisoning, there being some few features in common; yet of them, those in the latter are obscured by more prominent symptoms not generally considered suggestive of plumbism. In a subsequent paper, the material for which is being collected, some cases of this sort will be discussed and the results of the tests for lead in the urine given.

The sixty-four cases here considered include nearly all that first came to my notice due to the introduction of lead chromate into the food furnished by the two bakers, Palmer and Schmid, who were recently held by the coroner to await the result of a judicial inquiry. They do not by any means include the whole number affected. From subsequent observation I am convinced they are only a modicum and that the extent of the evil is not yet fully known

Of these 64 cases 32.81 per cent. (21) are males and 67.18 per cent. (43) are females. This large excess of females affected may be explained by their greater fondness for the food containing the lead salt. Both sexes appeared to be equally susceptible to the metal and each suffered with equal severity. Of five women who exhibited symptoms of plumbism during gestation, none aborted, but all at full term gave birth to living children; one had, however, two convulsions at the termination of the seventh month of pregnancy, believed to be of saturnine origin, though a small amount of albumen was present in the urine. Four of these five infants had convulsions within two months after birth, in which two died.

78.21 per cent. (50) of the cases exhibited the saturnine cachexia, displaying an anæmic appearance with an earthy-yellow hue to the skin; a sallow tint without yellowness was present in the remaining 21.87 per cent. (14). In 10.93 per cent. (7) the skin became intensely yellow at one time or another, notably when colic was present. The dull, anæmic, somewhat listless look, associated with a peculiar fulness of the cheeks, of which Oliver[1] speaks, and which is considered by him as quite suggestive of plumbism, I noticed in but three cases. Emaciation was present in nearly all who had been affected for several months and in some was marked.

In a large number neurasthenic symptoms antedated for a considerable period the outbreak of colic, arthralgia, or encephalopathy. Many recalled that for days and weeks prior to the development of marked symptoms of plumbism they were affected with progressive muscular weakness, the slightest exertion causing fatigue, and often aching in the lower extremities; they had vague pains in various parts of the body, loss of flesh, mental depression, the skin had become sallow, they had passed restless nights, were affected with insomnia and arose in the morning totally unrefreshed.

Among the neurasthenic symptoms to be especially noted are: the mental depression, which was a

[1] Read before the Philadelphia County Medical Society, September 14, 1887.

[1] Brit. Med. Journal, Oct. 17, 1885, p. 732.

prominent symptom in 54.68 per cent. (35), in several it approached melancholia; marked impairment of memory present in 17.18 per cent. (11); great prostration and weakness, the slightest exertion causing fatigue, present in 54.68 per cent. (35) —the fatigue was especially marked on rising in the morning, and may have been caused in part by obstinate insomnia, with nocturnal restlessness, of which the same number complained; vague neuralgic pains as a portion of the neurasthenia—apart from severe arthralgia—were present in 9.36 per cent. (6); 7.81 per cent. (5) made complaint of general pruritis, unassociated with icterus, and the same number of cutaneous and muscular hyperæsthesia. These symptoms were, in nearly all classes of cases, associated with those indicative both of disordered primæ viæ and of the specific action of the metal on the gastro-intestinal apparatus. There were very few of the sixty-four that had not more or less pronounced anorexia, associated with a heavily furred tongue, and a very fetid breath, which in some cases was so peculiarly so as to deserve the name metallic. 32.81 per cent. (21) spoke of a bad taste, which 2 described as persistently sweetish; 1 as metallic; 1 as sulphurous, and 4 as sour; 13 were unable to describe theirs intelligently. Nausea was present in a large number, and in several who vomited very little, if at all, and had no colic. Colicky pains of all sorts, severe and light, and attended by more or less constipation, were present in 76.56 per cent. (49), and 60.93 per cent. (39) exhibited the phenomena of pronounced lead-colic. These pains were felt most often about the umbilicus, and following that in frequency about the epigastrium; they were in 53 per cent. (26) of the (49) cases relieved by firm pressure when applied gently and were accompanied by obstinate constipation in 55.10 per cent. (27); and moderate in 34.68 per cent. (17); obstinate constipation, alternating with severe diarrhœa, was present in 1.55 per cent. (1). Agonizingly severe loin pains coexisted with 19 cases of pronounced colic.

The peculiar character of the pulse—diminished in frequency and increased in strength and volume —usually considered one of the characteristic features of lead colic, I did not find present in the five cases I saw in the paroxysms; in these it was frequent and of only moderate strength and volume.

One of these cases was a patient of my own and was of peculiar interest because of her symptoms closely resembling hepatic colic. She is a woman weighing over two hundred pounds, whose first noticeable symptom of plumbism was attacks of exceedingly severe colic always appearing suddenly, and having their seat in the right hypochondrium and thence radiating to various parts of the abdomen and back. They were usually preceded for a day or two by slight colicky pains in the region of the gall-bladder and epigastrium, with constipation, anorexia, and an icteroid hue of skin. There was always during the attacks tenderness on superficial or deep pressure over the hypochondriac region, and the abdomen was distended rather than contracted; constant nausea and frequent vomiting were present, the vomited matter consisting largely of bile; the bowels were much constipated and the scybalæ voided were clay-colored; the urine was concentrated, scanty, and contained a large excess of urates, but no albumin or casts. The attacks rarely lasted over eight or twelve hours, being checked without much difficulty by free use of morphine and atropine hypodermatically. Because of her general condition, habits of life, and her known fondness for sweets and fats, colic due to the passage of gall-stones was at first suspected and treatment was instituted for that affection, her feces being carefully washed and strained, but no stones were ever detected. Her gums, which were much retracted, showed a faint bluish streak along the lower incisors. She subsequently developed more marked symptoms of plumbism, but under potassium iodide made a rapid and continuous recovery, entirely regaining color and losing the constipation.

The frequency of the presence of vomiting in all classes of cases, and particularly in those with epigastric and umbilical pains deserves more than passing notice, and would seem to indicate a special irritant action of the lead chromate. It occurred in 81.63 per cent. (40) of the forty-nine cases of light and severe colic, and in eleven (17.18 per cent of the sixty-four) cases in which other symptoms than colic were present. It was present, therefore, in 79.68 per cent. (51) of the whole number of cases and was nearly always severe. The vomited matter had a greenish-yellow or greenish hue. Nausea preceded vomiting and was a quite constant symptom in a few of the sixty-four who did not vomit. Tanquerel, who saw a very large number of cases of plumbism, recorded 1217 carefully studied cases of lead-colic; he found vomiting present in only 33 per cent. (412) of the 1217, and rarely if ever observed it with other manifestions of lead disease than colic. I believe the abdominal pains in all of the 49 cases were colicky and not inflammatory, though I am unable to be as positive regarding this point as I should like. Against it in a minority were the facts that firm pressure seemed to aggravate them greatly, and the abdomen in several cases was distended during the paroxysms. The pulse, too, during the paroxysm in at least 5 cases was far from being characteristic of lead colic. The color of the vomit was probably due to bile and not to the lead chromate, for Tanquerel mentions a somewhat similar colored vomit in his cases which were not due to poisoning by this particular salt of lead, and this same character of vomit continued in many of the cases, at intervals, for several weeks after the poison had ceased to be ingested.

It has been ordinarily supposed that lead chromate is soluble to a very limited extent in the intestinal juices, and hence its ingestion in small quantities cannot give rise to serious symptoms, though Schuchardt[1] states that it appears to act as a corrosive poison and more powerfully even than the acetate, while Wharton[2] and Stillé suppose it is more or less insoluble, though they believe it sometimes gives rise to acute poisoning owing to its decomposition

[1] Maschka's Handbuch der Gerichtlichen Medicin.
[2] Medical Jurisprudence.

after it enters the body. Owing to this fancied insolubility and the number of cases now indubitably traced to its use as a food-dye, it might be thought that the samples used by bakers contained lead carbonate as an adulterant and that the poisoning was due to the latter more soluble salt, but Dr. Leffmann has recently ascertained by experiment that, while the commercial samples do not yield lead to distilled water or carbonic acid water under pressure, notable quantities are dissolved in a short time by dilute solutions of the ordinary household acids, citric and acetic, and also by very dilute solutions of hydrochloric acid, or by very dilute solutions of hydrochloric acid and pepsin. The non-solution of lead from commercial lead chromate by carbonic acid under pressure indicates that the samples tested, which include that obtained from Palmer, do not contain lead carbonate. These facts set at rest the question of insolubility, and explain the ease with which poisoning occurred; especially when one reflects that the lead was taken with the food, at a time when it could most readily meet the agents necessary for its solution. No doubt, decomposition rapidly follows its ingestion, and soluble chromium and lead salts are formed which diffuse into the blood.

That the various salts of chromium do act as local and systemic irritants, there can be no reasonable doubt, one has but to consult the various works on toxicology and jurisprudence[1] for abundant evidence on this point. Lead chromate, because of its supposed non-solubility in the stomach, has been thought less toxic than any of the other chromium salts, though Von Linstow[2] and Leopold[3] report 3 cases of acute poisoning due to it, occurring in very young children,[4] and terminating in death in a very few days, in which the autopsy revealed extensive signs of the action of a corrosive poison, such as softening, ulceration and perforation of the stomach and duodenum, etc., though the amount of lead chromate ingested in each of Von Linstow's cases was said not to have exceeded the one-fifth of a grain. In these latter cases, from the character of various symptoms present and such marked signs of the action of a corrosive poison found post-mortem, as well as from the smallness of the quantity of lead chromate taken, it may be that potassium bichromate, and not lead, was the active toxic agent. In the recent fatal cases it is unfortunate that the viscera were not examined with reference to the action of a corrosive poison. Of the two under my charge, in one, the gastric symptoms were apparently almost nil, in the other, though lead poisoning was suspected to be the cause of death, the source of the poisoning not then being ascertained, the particular salt ingested was not known, and the viscera were removed with as little handling as possible, exclusively for chemical examination.

The abruptness of the seizures in many of the recent cases might suggest acute poisoning, but in all of them, by careful inquiry, I succeeded in eliciting a history of some signs of failing health for at least a brief period prior to the onset of the seizures, and in many of slight colicky, arthralgic or head pains suggestive of plumbism. All, too, showed the sallow skin, and none of this class was without at least a faint blue line on the gums. The four members of the Helm family, whom I saw through the kindness of Dr. Hellyer, were notable examples of this; it was ascertained that in these some of the abovementioned symptoms had been present in a slight degree for the space of a week or ten days prior to the marked outbreak of their trouble, which occurred on June 18th. They were then within a day or so of one another taken suddenly ill; their principal symptoms being, collectively, nausea and frequent vomiting, often uncontrollable, the vomited matter having a yellow or greenish-yellow hue; heavily coated tongue; exceedingly fetid breath; severe, paroxysmal colicky pain above the umbilicus, aggravated by food and apparently by pressure, but decreased by warmth and poultices; severe pains in the loins. Very obstinate constipation was present in all save Annie Helm, whose bowels could be moved without trouble by mild purgatives and whose passages were described to be exceedingly yellow. All had very severe pains in the knees and ankles unattended by heat, redness, or swelling in any save Mr. Helm, who, after a few days, had an attack of acute articular rheumatism as a complication. Violent continuous cephalalgia was present in Annie[1] alone and was the precursor of convulsions, which appeared on the fifth day. The convulsions were at first local but soon became general, violent, and long-continued; in the intervals she lay in a comatose state and died on the eighth day. The skin of all was sallow, Mr. H. and Annie becoming quite jaundiced, and on the gums of all could be seen a slate blue line.

In some of the Palmer cases, for example, the first two children, Charles, æt. 7 years, William, æt. 10 years, which, from not being able to get detailed histories, I have excluded from the cases here analyzed, symptoms were present indicating the action of an irritant poison. They were seized, one on May 9th, the other on June 27, 1884, suddenly with nausea, vomiting, abdominal pains, great prostration, and continuous convulsions, and died within 24 to 36 hours after the onset of the symptoms. They were both, from all I can learn, thought to be in good health on the morning of the day of seizure, and were known to have eaten largely of the baker's colored cakes on that day, while one, in addition, drank quantities of lemonade. I have notes of a case resembling these as regards the abruptness of the onset, which, however, did not have a fatal termination. It was that of a boy of 12 years, who, some hours after a hearty meal of dyed cakes procured from Palmer, was seized with identical symptoms. He has since come under my observation

[1] See Taylor's Treatise on Poisons. Maschka's Handbuch der Gerichtlichen Medicin; Wharton and Stille's Medical Jurisprudence; Falck's Lehrbuch der Practischen Toxicologie.

[2] Vierteljahrschrift für gerich. Med. u. öffentl. Sanitätswesen, Band xxi. 60.

[3] Ibid. Sanitätswesen, Band xvii. 29.

[4] Leopold's case was æt. 2 weeks; Von Linstow's were æt. 1¼ and 3½ years respectively.

[1] Notable quantities of lead were found in her viscera by Drs, Reese and Leffmann, vide THE MEDICAL NEWS, Aug. 27, 1887. p. 231, Case v.

suffering with lead cephalalgia and arthralgic pains in the knees and ankles. Six cases, similar to the last, exhibiting symptoms of acute poisoning due to the same cause, were reported in the *Medical Times and Gazette* of December 24, 1859.

Arthralgia was present in 73.43 per cent. (47); in 56.25 per cent. (36) it affected the inferior extremities, including the loins, only; in 17.18 per cent. (11) it was more or less general. In 64 per cent. (41) it was severe, agonizingly so in a few; in the remaining (6) cases it was slight, and in all the pains in the lower limbs were of greater severity than in the upper. In 37.50 per cent. (24) it was associated with headache, which, in most of the instances, appeared simultaneously; in 20 of these the headache was severe, in 4 mild. Severe arthralgia, without any preceding or following colic, but with usually cachexia, disordered primæ viæ, and (in two) constant diarrhœa, occurred in 8 of the 47. In 10 cases the arthralgia preceded for a considerable period the colic and other symptoms, save cachexia and debility; in 29 cases it occurred coincidently with or following colic. The flexor surfaces of the knees and ankles and usually the flexor muscles about these joints, were most affected; cramps in the calves and posterior and outer aspect of the thighs were frequent accompaniments of the pains. In several burning pain was felt in the soles of the feet and in the toes, accompanied by a hyperæsthetic condition of the skin of the same parts. In the 11 cases in which the superior extremities in addition to the inferior were affected, the pains were less severe above than below, and here, too, showed a preference for the flexor surfaces. The pains of all were acute and burning, or dull and aching in character, were always worse at night and never accompanied by inflammatory conditions, such as heat, redness, or swelling, save in the case of Helm, mentioned on page 755. They were in all assuaged by pressure and friction, but in many, increased by motion, and their onset was often preceded by ataxic symptoms in the limbs.

Many made complaint of a dull aching throughout the whole body, referring it especially to the osseous system. It was particularly marked at night and usually antedated colic and arthralgia.

Paralysis of the extensor muscles of the forearm, typical wrist-drop, occurred in only two; in both it was bilateral and seemingly complete. I was unable in either case to get the electrical reactions, because of ignorant opposition on the part of the subjects and their friends. In three cases there was slight ataxia of the extensors of the wrists and fingers, but paralysis did not occur.

Headache was present in 73.43 per cent. (47); in 67.18 per cent. (43) it was more or less constant for a considerable period, with exacerbations and remissions, and of sufficient severity to indicate involvement of the deep cranial structures. In 35.93 per cent. (23) it was present without arthralgia. It was felt most severely and frequently in the frontal regions, and, following that, in the occipital; in a few it was equally severe and constant in both regions. Some, in addition, complained of pain in the nucha, and in a small number the pains were equally distributed about the head.

Encephalopathy was present in 23.43 per cent.[1] (15); in 17.18 per cent. (11) it was manifested as eclampsia; in 2 (3.12 per cent.) as delirium; in 1 as a modification of the delirious form, melancholia with accompanying hallucinations and delusions; and in 1 as coma. The eclamptic seizures were of epileptiform type, and were preceded in 10 of the 11 cases for days or weeks by other manifestations of saturninism, such as cachexia, colic, arthralgia, or severe continuous headache; and in at least 5 of these they occurred primarily, during or immediately subsequent to an attack of colic and arthralgia. In at least 4 of the 10, excruciating cephalalgia preceded for several days their outbreak. The convulsions were in all, general, severe, and in several, violent. The duration was longer than that of idiopathic epilepsy, the clonic stage often continuing upward of a half-hour, during which the tongue was known to be bitten in at least 6. The intervals in the 8 fatal cases were exceedingly brief, the convulsions rapidly recurring, until death took place in from eight hours to four days. In these, too, after the first few seizures, consciousness was entirely lost, and stupor or coma persisted until dissolution. I was unable to discover that an aura preceded the convulsive attacks in any of the 11 cases save 1, yet it may have in all; in this one it preceded only three spasms out of several. In 7 of the 11, I was able to discover the probable time existing between the first exposure and the appearance of the convulsions, during which lead was constantly ingested. In one it was 15 days; 32 in another, and 33 in a third; $2\frac{3}{4}$ months in a fourth; 4 months in a fifth, and $4\frac{2}{3}$ months in a sixth—these were all members of one family; in a seventh it was about $2\frac{1}{2}$ months.

This last case presents several points of interest. It may be one of a type which is occasionally overlooked. It is that of Mrs. S., aged thirty years, of good previous health, who had eaten from early in April, 1886, for a period of fourteen months, almost daily of the dyed cakes. For one-half of this period she ate daily from four to six of the buns, frequently then partaking of nothing else at the morning or evening meal. For two or three months anterior to her confinement on May 23, 1886, she began losing strength, was restless and sleepless at night, rising in the morning weak, enervated, and listless; she had anorexia, occasional nausea, vomiting, colicky pains, and constant dull aching in the knees and ankles; her skin became sallow and pruritic, and the bowels constipated. About June 15, 1886, during an attack of severe headache and of what presented the phenomena of mild lead-colic, save that diarrhœa alternated with constipation, she had a violent epileptiform convulsion, lasting nearly an hour, during which she severely bit her tongue, as she did in all subsequent convulsions; no aura preceded. On July 6, 1886, all the less pro-

[1] If three of the earlier Palmer cases, the two boys before mentioned and the first Mrs. Palmer, were added to these, this percentage would be raised to 26.86 or 18 cases out of 67, and that of the eclampsic variety to 20.89 or 14 cases out of 67. They were undoubted cases of lead eclampsia, and are excluded from this paper only because the lack of detailed history renders them unavailable for statistical purposes.

nounced lead symptoms continuing, she had three convulsions in the space of three hours; severe headache and slight colic preceded for two or three days. On the 25th of the same month, after a day or two of colic and headache, she had a number of convulsions lasting four and a half hours, with intervals of unconsciousness. In December, 1886, and March, 1887, they recurred, preceded by the same symptoms, and now, for the first time, prior to these and the last convulsions occurring at midnight on May 28, 1887, she had a distinct sensory aura of numbness and tingling throughout the body immediately preceding, and she felt a seizure imminent. The spasm of May 28th was very violent, and was preceded for a few hours only by abdominal cramps, which appeared during the evening after eating a number of particularly yellow cakes at her noon lunch.

I saw her early in August last for the first time, she then had been for months under the treatment of irregular practitioners, who had been unable to discover the nature or source of her malady; she presented marked symptoms of plumbism with pronounced lead cachexia. There were present in addition, frequent attacks of syncope by day, and at night delirium accompanied by limited clonic spasms. There was a pronounced blue line along the lower gum, which was much retracted from the teeth; in the upper gum where no teeth existed, no blueness could be discovered. Her heart was over-acting with a ringing, apical second sound. The urine was found to contain lead in notable quantities, but though repeatedly carefully examined for albumin and casts none were at any time found. She was under treatment for a short time and improved; I then lost sight of her. I have since understood that she has developed delusional mania.

One of the two cases of the delirious variety of encephalopathy has been already described;[1] the other was a more pronounced one. It was that of a girl, E. B., aged eighteen, who was profoundly saturated with lead through baker Schmid's cakes. Preceding a marked outbreak of arthralgia and encephalopathy she had symptoms indicating mental and physical exhaustion; she entirely lost her memory, was incapable of exertion, and was constantly wearied; there were present well-marked lead-cachexia, total anorexia, coated tongue, fetid breath, frequent nausea, and vomiting of a greenish-yellow fluid, obstinate constipation, an intense blue line on both gums, so marked that it was noticed by her acquaintances, but at no time did she have colic. She had three or more seizures, lasting two or three weeks at a time (with a number of minor ones), in which she was almost constantly delirious with very brief lucid intervals. They were always preceded for a day or two by intense frontal headache and exceedingly severe pains in the knees, calves of the legs, ankles, soles of the feet, and, occasionally, the loins. There were intermissions of about a week between the attacks, and all her symptoms were aggravated at night.

The case of melancholia with accompanying delusions deserves at least brief consideration. It was referred to on page 753 and is of interest because the absence of the more pronounced symptoms of lead-poisoning caused it to be mistaken by two physicians for several quite different affections. The following are the points briefly given:

Mrs. V. G., aged twenty-two; no children; had been for months a hearty eater of Palmer's dyed buns; in excellent health up to three and a half months ago, then began to grow progressively weak, was easily wearied, the slightest exertion causing great fatigue; she suffered with insomnia, was depressed mentally, and there were constantly present such disorders of the digestive apparatus as coated tongue, foul breath, bad taste, frequent nausea with occasional vomiting, especially after food, mild constipation, and occasional slight colicky pains in the left lumbar and inguinal regions. There were also total anorexia, and earthy-yellow hue of skin, and severe, constant, dull, aching pains in the knees, with a feeling of soreness in the feet. Violent occipital and frontal headache appeared shortly after she began to fail in health and soon became constant with remissions and agonizing exacerbations often associated with transient amblyopia. About the same time she was affected with subjective and objective vertigo, the slightest exertion causing giddiness. Since the headache and vertigo have been present she has frequent hallucinations and delusions of sight and hearing, among others, she would imagine she was approached by persons, who did not exist, with whom she would carry on lengthy conversations. During and following these spells she becomes exceedingly despondent and has dismal forebodings.

At the present time, in addition to the above symptoms, she complains of slight ataxia of the forearms, though the muscles respond normally to faradism and galvanism. The heart is overacting with an accentuated second sound at the apex and high tension in the pulse at the wrist. Various specimens of her urine were carefully examined for albumin at different times, but always with a negative result.[1] As her sight had recently failed somewhat, the eye-ground was examined by Dr. Hansell, who reported that "in the right eye the nerve is oval; the upper and outer quadrant is lined with pigment; the lower part is clear and sharply bounded. There is venous pulsation; the arteries are slightly swollen, more so than normal. The above conditions are even more pronounced in the left eye." The gums of this case did not show what is ordinarily regarded as a "blue line," but within the thin margin of gum grasping the neck of the upper left central incisor could be seen by careful inspection with the naked eye, and more easily with a single lens of moderate power, a number of bluish-black dots which were undoubtedly lead. A piece of white paper pushed up under this edge of the gum, between it and the neck of the tooth, brought out the dots with great distinctness. The thin edge of gum about the necks of the lower

[1] The Medical News, June 18, 1887, p. 679; Case VII.

[1] Her urine was not examined for lead until she had almost entirely recovered, and had discontinued the potassium iodide. It was then resumed for a few days, and a sample collected. Several tests were made of it by Dr. Leffmann, and distinct traces of lead found.

central incisors showed this pigmentation somewhat more plainly.

The patient[1] with the comatose variety of encephalopathy presented very much the same symptoms prior to the full development of the encephalopathy as the cases whose histories I have just related, so no detailed description need be given. He was profoundly affected by lead. With him, intense frontal headache, which he described as "deep-seated," and very severe arthralgia of the lower limbs preceded, for a short period, the coma. Though there had been marked gastric derangements, with the various manifestations of lead-colic, it was less evident at that time. So far as I could learn, he had but one attack of coma, very prompt treatment preventing a repetition; this appeared suddenly, during severe headache and arthralgia; he was totally unconscious and remained in this condition for seventeen hours. A careful examination of the urine showed there was no associated kidney trouble.

Encephalopathy is undoubtedly the severest and probably the most infrequent of all the manifestations of lead-poisoning. It has been met with almost exclusively among those whose work favors a copious absorption of the metal. There seems slight doubt, from the large percentage among these 64 cases which are probably but a small part of the number poisoned by the two bakers, that the affection has been more than once overlooked and attributed to other causes. There is now no question, from recent developments, that the poisoning has been going on unsuspected in various sections of the city for years. Since my attention has been directed to the matter, I have been surprised, in looking over the mortuary records of the past few months, to see the large number of deaths returned as convulsions. The matter seems to deserve more attention from the profession than it has yet received.

The gums of 89 per cent. (57) of the 64 showed the "blue line" and it probably existed also in 6 of the remaining 7 cases, but was not looked for. In 24 of the cases the "line" was very marked above and below on the labial and lingual surfaces of the gums, about the necks of the teeth, and was accompanied by more or less retraction of the gum, which bled readily when subjected to even light friction. In 8 of these, who were intensely saturated with lead, the retraction was extreme and the borders of the affected gums looked as if fringed, displaying much of the neck surface of the teeth, which were usually of a brown color. In 16 there was a moderately well-marked "line," either below or above, in the edge of the gum about the necks of the incisors, canines or bicuspids. In these the retraction of the gum was not great, but the thin edge of the mucous membrane grasping the neck had become atrophied, and the edge of the gum containing the deposited metal could be readily separated from the neck and a portion of the fang of the tooth. In 17 the "line" consisted of either a faint, bluish-black streak, limited to the mucous membrane grasping the neck, or of a number of fine bluish-black dots as described in the case of Mrs. V. G., irregularly distributed within the same portion of gum; these dots, or the streak which seemed to be simply an aggregation of them, were most frequently limited to a portion of gum grasping a single tooth, often one of the bicuspids or anterior molars, so that care had to be taken that it was not overlooked. The "line" in most instances was more marked below than above, and much more pronounced on the labial than on the lingual surface. A severe case was seen in that of the wife of one of the bakers, who was thoroughly saturated with the metal. The labial surface of the whole gum in the upper and in the lower jaw was deeply dyed, beside there being a deep line in the gums at their junction with the teeth.

The mortality in the 64 thus far is 12.5 per cent. The 8 deaths were among the eclamptic cases, making a death-rate in the latter of 72.72 per cent. If with these 8 the 3 were included, mentioned in the foot note on page 756, the general mortality would be raised to 16.41 per cent., or 11 deaths out of 67, and the mortality in the eclamptic cases would reach 78.57 per cent., or 11 deaths out of 14.

It is worthy of note that in the viscera of all of the 5 fatal cases examined by Drs. Reese[1] and Leffmann lead was found, and in 4 in notable quantities. It was encountered in large quantities in the liver. In only 2 of the 5 were the brain and spinal cord examined; these organs yielded to several tests distinct evidence of its presence, which indicates that it would probably have been found in the same organs in all had they been examined.

In conclusion I desire to express my thanks to Dr. Leffmann for examining the urine of several of the cases for lead, to Dr. Hansell for eye examinations, to Drs. E. Hellyer, Isaac MacBride, and W. K. Brown, for permitting me to see and study their cases, and to Drs. A. A. G. Starck and W. G. Bobb for histories of their cases, some of which I have used in the preparation of this paper.

2628 N. FIFTH ST.

[1] Whom I saw through the kindness of Dr. Isaac Mac Bride.

A NEW CHROMOGENIC BACILLUS—BACILLUS COERULEUS.

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IN a cultivation of the organisms in water from the Schuylkill River (Belmont Reservoir), planted January 15, 1886, there appeared a fungus of intense blue color, which, on examination and further culture, proved to be an unknown species of chromogenic bacillus.

It grows well on boiled potato at ordinary temperatures, with at first a beautiful dark blue hue, deepening into an intense blue-black, as the coloring grows old. The colonies when developed fully are marked by numerous cup-shaped depressions with elevated borders. It is aërobic so far as its color is concerned, the cultures in the mass of gelatine-peptone in tubes invariably developing as colorless growths, while the upper or surface part of the same culture shows a bluish tinge, faint because of the thinness of the stratum. Liquefaction of the surface invariably attends the cultures in peptone

[1] Vide report in THE MEDICAL NEWS, Aug. 27, 1887.

gelatine. The color of the bacillus is contained in the cells, and cannot be dissolved out by water or alcohol; nor is it affected by acids. On potato, where the color is best seen, the bacillus foci grow only on the surface, not penetrating to any depth, as is the case with the micrococcus cyaneus.

The bacillus, as seen under the microscope, is from 0.002 to 0.0025 mm. in length, and 0.0005 in width. It frequently develops in leptothrix-like chains. Some few of the individuals on the specimens mounted present a comma shape, although this is probably accidental, due to overheating in the preparation. An excellent stain for it is the ordinary methyl-violet. For its recognition the higher powers of the microscope should be employed, although the individuals can be discovered with a good $\frac{1}{4}$th inch lens.

It is possible that this form might be confused with bacillus syncyaneus, bacillus violaceus, or micrococcus cyaneus. The color, however, is so intense and in old colonies so dark that it alone should differentiate in every instance.

The coloring matter of *bacillus syncyaneus* (*Beiträge z. Biologie d. Pflanzen*, vol. iii. p. 187) is of a lighter shade, and is changed by soda or potash to a peach-blossom pink, ammonia changing it to a violet color—to none of which reactions the color of *bacillus coeruleus* responds. The *bacillus violaceus* (*Ann. Societ. Nat. Moden.*, xiv. 1880, and *Botanisch. Centralblatt*, 1, 1528) grows best on solution of egg albumin, and the coloring is of a characteristic hue, and the color readily soluble in alcohol. The *micrococcus cyaneus* (*Cohn, Schröter*) grows well on boiled potato, as does bacillus coeruleus, but penetrates with its blue color deep into the slice; its color is soluble in water, the solution at first green and later blue. This micrococcus very readily produces softening and liquefaction, while the bacillus coeruleus produces but a comparatively small amount of such change; and microscopically the diagnosis is readily made. The *micrococcus violaceus* is distinguishable from the bacillus coeruleus by its characteristic hue and its mode of growth (in gelatinous drops of a violet color), and later by the microscope.

Like the other chromogenic bacilli generally, the bacillus coeruleus seems to be non-pathogenic, and is interesting only so far as being an addition to our knowledge of microscopic botany.

#23 SOUTH SEVENTEENTH ST., PHILADELPHIA.

EFFECT OF BERGEON'S TREATMENT ON THE URINE OF PHTHISICAL PATIENTS.

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AND
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WE have the theory that hydrogen sulphide, when administered by rectal injection, is not absorbed by the system, but that, being carried by the venous system to the lungs and there exhaled, it acts only locally on the mucous membrane; such being the case, it would have no effect on the urine, but if it was absorbed the amount of sulphates would be largely increased. With the object of ascertaining the fact we made a series of quantitative analyses of the urine of patients thus treated.

The sulphates were estimated by means of a standard solution of baric chloride and proved by a solution of potassic sulphate, as recommended by Neubauer and Vogel; the chlorides, by Mohr's nitrate of silver method.

The phosphates were estimated by means of a standard solution of uranic acetate in the presence of an acidulated solution of sodic acetate, with potassic ferrocyanide as indicator.

The urea was measured by mixing a solution of sodic hypochlorite with the urine, thus decomposing the urea, and then measuring the nitrogen given off, and estimating from that by means of Lyon's apparatus.

Hydrogen sulphide was detected by heating acidulated urine, and allowing the vapor to come in contact with blotting paper moistened with a solution of plumbic acetate, and also by adding some of the lead solution to the urine, which would give a black precipitate.

The ammonia was detected by hydrochloric acid giving white fumes, as well as by red litmus paper, which would be turned blue by the urine, when by the application of heat it would return to its original color.

In selecting cases we endeavored to obtain the different types and stages of the disease represented, as well as possible.

No. 1 was in the third stage, a cavity in each lung, sonorous and crackling râles, copious expectoration and night-sweats, anorexia; pulse 115–150; respiration 50; temperature 102°; urine scanty; herpetic eruption on the face, and confined to his bed.

In six week he was able to exercise in the yards, night-sweats ceased, cough and expectoration slight, good appetite, eruption on face had disappeared.

No. 2, when admitted to the hospital, had a severe hemorrhage; pulse 118; cavity in right lung, expectoration thick and yellow, not profuse. After three months' treatment night-sweats have ceased, cough slight; pulse 90; appetite very good; is gaining strength. The disease was not checked before a cavity formed in the left lung also, but now both lungs are clearing up rapidly.

No. 3, when admitted, had a cough, subcrepitant râles, dulness on percussion. All symptoms generally improved, and is comparatively well.

No. 4 was admitted to the hospital, suffering from a severe hemorrhage from the rectum, weak and fainting. Cough, expectoration thin, dulness on percussion at both apices; large, cold abscess on his neck below lower jaw.

July 21. Lanced abscess.

Oct. 14. Cough and night-sweats ceased; slight discharge from abscess; gain in flesh and strength.

No. 5 commenced treatment July 19, 1887. Troublesome cough; free expectoration of thin sputa; night-sweats, hemorrhage, anorexia.

Oct. 22. Cough and night-sweats ceased; lungs cleared up; good appetite; gaining flesh; slight expectoration in the morning.

No.	May 31	June 10	June 18	June 25	July 2	July 16	Sept. 10
Amount of urine in 24 hours	480 c.c.	530 c.c.	810 c.c.	1150 c.c.	750 c.c.	1410 c.c.	1870 c.c.
Specific gravity	1.021	1024	1023	1020	1024	1020	1026
Amount of urea in 24 hours	15.4	17 gr.	24 c.c.	28 c.c.	19.2 c.c.	28 gr.	38 c.c.
" of chlorides in 24 hours	12	"	7	9.8	8	9	7.8
" of phosphates in 24 hours	1.15	1.1	1.6	1.4	1.5	2	2.8
" of albumen	0.5	0.5	0	1.5	0.5	trace	trace
Reaction	NH	NH	alk.	"	alk.	trace	trace
H_2S	"	"	free	"	free	"	"

No.	June 14.	June 18	June 25	June 28	July 2	July 9	Aug. 2	Aug. 16
Amount of urine in 24 hours	1008 c.c.	1210 c.c.	1500 c.c.	1810 c.c.	1200 c.c.	1350 c.c.	1150 c.c.	1500 c.c.
" of urea	8	15	20	24	15	8.5	9	12
" of chlorine and iodine	2.2	2.5	"	3.5	"	2	trace	12
" of chlorides	2.2	2	"	1.5	trace	0.25	trace	1.5
" of sulphates	2.5	2.5	"	2.5	?	0.8	2.5	2.2
Reaction	neut.	neut.	neut.	neut.	neut.	neut.	neut.	neut.

No.	1 June 1	2 June 13	June	June	July 13
Amount of urine in 24 hours	1470 c.c.	1008 c.c.	1024 c.c.	1050 c.c.	1300 c.c.
" of urea	5.75	8.5	14	20	10
" of chlorides in 24 hours	2.50	2.50	11	15	15
" of phosphates in 24 hours	2.60	3.60	3	2.4	2
" of sulphates	2.40	3.20	11	12	10
Reaction	alk.	alk.	alk.	alk.	alk.

No. 4	June 6	June 13	July 11	Aug. 8.	Sept. 6	Oct. 1.
Amount of urine in 24 hours	1140 c.c.	960 c.c.	908 c.c.	1125 c.c.	1130 c.c.	1140 c.c.
" of urea	28	12	20	28	18	20
" of chlorine and chlorides	10	11.5	5	33	11	16
" of phosphates and in 24 hours	3.88	2.2	1.5	1.7	2	1.5
" of sulphates	1.7	1.1	1.	1.6	3.1	2.7
Reaction	NH.	alk.	acid.	acid.	acid.	acid.
Urine	milky	milky H_2S	acid	clear	clear	clear

No.	June	July	Aug.	Sept.	Oct.
Amount of urine in 24 hours	1.5 c.c.	1.6 c.c.	600 c.c.	1050 c.c.	1240 c.c.
" of urea	2.2	11.5	4.2	"	5
" of chlorides in 24 hours	5	5.4	5.4	11	10
" of sulphates	"	10	3	2.4	2.5
Reaction	alk.	alk.	acid.	acid.	acid.
H_2S	free	"	"	"	"

No. 6 commenced treatment June 22d. He was in the second stage of the disease; very troublesome cough, requiring about two grains of morphia through the night to control it.

July 25. Morphia and gas stopped. He has only a slight cough and expectoration in the morning; has gained in weight thirty pounds.

Up to June 20th, we made the gas from sodic sulphite, not being able to get sodic sulphide before that time. On examining the urine of four patients a week after the sulphide was substituted, we found that the percentage of sulphur was markedly decreased in them all; on resuming the sulphite, it again increased. There seemed to be much less pain from gas from the sulphite than from the sulphide.

After being on the treatment five or six weeks, the patients do not seem to be able to retain the gas so well; although it be repeated several times a day, and a marked fall in the percentage is noticeable, yet they continue to improve.

The urine of about one-half of the patients at the beginning of the treatment was alkaline, two of them ammoniacal. In all but one case, it became *acid* in from four to six weeks. Of seventeen cases, but one has died. He was very ill when the administration of the sulphuretted hydrogen was begun; he survived a month, growing rapidly worse until he expired. Six were discharged free from cough. All have gained in flesh. All types were benefited, the most markedly being those complicated with bronchitis.

The action of the gas on the bowels is to constipate rather than to relax. It has a slight action on the heart, tending to slow but not to depress it. It seems to have a specific action on the skin, rendering it smooth and clear.

From the effect it has on the urine, we believe it would be of service in certain diseases of the urinary tract.

By reference to the tables it will be seen that the sulphates are largely increased in amount, and that the sulphuretted hydrogen was frequently detected in a free state in the urine; in fact, much oftener than in the breath.

The toxic action of this gas causes an increased secretion from the gastro-intestinal canal and skin, and is laxative, finally impairing the red blood-globules, causing great anæmia, wasting, debility, and a feeble circulation. These symptoms all accompany phthisis.

If sulphuretted hydrogen has no toxic action on microörganisms, is it then an instance of *similia similibus curantur?*

MEDICAL PROGRESS.

THE TREATMENT OF HEADACHES BY NITRO GLYCERINE.—DR. TRUSEVICH publishes in the *Ejenedêlnaya Klinischeskaya Gazeta* a series of observations on the effect of nitro-glycerine on headaches. He adopts, in the main, the classification of headaches made by Dr. Day, whose work he translated into Russian, in which language it has already gone through two editions. The preparation generally used was the 1 per cent. alcoholic solution, though in a very obstinate case the 10 per cent. solution was used, two drops being first given, and, after an interval of two minutes, three more. The result of this heroic medication was that the patient, a girl of fifteen, became pallid, and her pulse very weak; however, a little water and some smelling salts quickly revived her, and she was none the worse. The nitro-glycerine had no effect on the headache, which was of a persistent character, and was probably due to some organic lesion, perhaps an affection of the cranial bones. As a rule, two or three one-drop or two-drop doses of the 1 per cent. solution placed on the tongue at intervals of a very few minutes sufficed to arrest the headache. The conclusion arrived at was, that all cases which depend entirely, or almost entirely, on a vaso-constrictor neurosis are immediately curable by nitro-glycerine. In cases where the cerebral anæmia is partly due to deficiency or poorness of blood, milk, iron, arsenic, quinine, and other tonic remedies are, of course, required in addition to the nitro-glycerine. The chief indications for the successful treatment of migraine by nitro-glycerine are pallor of the face and a paroxysmal character of the pains, also their augmentation on pressure of the carotids, and their diminution when the head is lowered. In "nervo-hyperæmic headaches" nitro-glycerine is useful, but it only acts indirectly by dilating the vessels in other parts of the system, and thus relieving the congestion in the cerebral vessels. It is positively injurious in headaches depending on passive hyperæmia. On this subject, however, Dr. Trusevich promises a future article. As a rule, he thinks that if nitro-glycerine fails to relieve, the prognosis is probably bad, as the pain is generally due to some organic lesion, such as thickening of the fibrous coverings following chronic alcoholism or syphilis, or to some osteophyte caused by periostitis, or, lastly, to morbid changes in the cranial bones. In some headaches of rheumatic origin, nitro-glycerine appears to have some effect, but Dr. Trusevich thinks that in others massage would probably be more beneficial. Where headaches are due to heart, lung, or to hepatic disease which causes passive congestion in the cerebral vessels, nitro-glycerine cannot be expected to do much good.—*Lancet*, Dec. 3, 1887.

ICHTHYOL.—The *Lancet* of December 3, 1887, speaks as follows regarding the value of ichthyol:

Ichthyol has now been in use some years, and bids fair to maintain its original reputation as a valuable medicament of very wide application. It is employed pure in rare cases, but more frequently in solution in water, oil, or a glycerine of the strength of 20 to 50 per per cent., for external applications in bruises, sprains, rheumatism, burns, chilblains, etc. It may be administered internally in 1 per cent. solution, or in the form of pills, in cases of chronic skin disease, gastric affections, and rheumatism. As a spray in 10 per cent. solution it has been employed in the treatment of throat and nasal affections. Ointments of various strengths are compounded for external inunction in erysipelas and rheumatism. An alcoholic ethereal solution of the strength of 10 per cent. has been successful in relieving neuralgia when sprayed on the painful region; stronger solutions are used for sciatica and lumbago. Plasters and fomentations of ichthyol are also used, and a soap is made for

preserving the skin and relieving chapped hands and kindred ailments.

STROPHANTHIN.—Among the various chemical tests and reactions of this substance the following are interesting:

Strophanthin gives, with strong sulphuric acid, a brilliant green color, changing to yellow and to brown.

With sulphuric acid and potassium bichromate a blue color is produced.

Nitric and hydrochloric acids, caustic potash and ammonia, and other alkalies produce a yellow color.

Nitrate of silver produces a reddish brown color, followed by a black precipitate.

Tannic acid gives an abundant white precipitate soluble in excess.

Chemical tests prove the existence in strophanthin of an organic body; whether it is a glucoside or alkaloid is not known.—*Journal de Médecine*, Nov. 27, 1887.

MYOMA OF THE FEMALE BLADDER; REMOVAL BY SUPRAPUBIC INCISION; RECOVERY.—At a recent meeting of the Clinical Society of London, DRS. GIBBONS and PORTER reported the following case:

The patient was a girl aged eighteen, of good general health, and the daughter of healthy parents. The earliest symptoms noticed were inability to retain the urine, and pain on making effort to do so. She was treated "for stone in the bladder, but without any relief." When admitted into the Grosvenor Hospital for Women and Children, she was found to have lost all control over the urine, which dribbled away from her; she experienced a dull aching pain in the perineum. There was no blood in the urine at the time. On bimanual examination a tumor was detected in the bladder; rapid dilatation of the urethra was accomplished with a view to a more accurate examination of this tumor. A week subsequently, the patient being under an anæsthetic, the tumor was removed by means of a galvanocautery écraseur; the loop of platinum wire was introduced through the urethra, and fitted over the tumor with the aid of the fingers passed into the bladder through a suprapubic incision which had been previously made for this purpose. When the platinum loop had been fixed round the base of the tumor, it was tightened up, and the current turned on. In five minutes the division of the tumor was complete; there was no hemorrhage during, or subsequently to, the operation. After removal the base of the growth and the interior of the bladder were carefully examined by the eye, a small incandescent electric lamp being introduced for the purpose; the advantages of this method were at once very apparent, for every part of the bladder could in turn be seen. The wound in the bladder was carefully sutured. There were no subsequent bad symptoms. The girl quickly and completely recovered, and had since remained well.—*British Medical Journal*, Dec. 3, 1887.

A CASE OF RETRO-STERNAL ABSCESS, WITH PARTIAL RESECTION OF THE STERNUM; RECOVERY.—RUSTIZKY, of Kiew, reports in the *Centralblatt für Chirurgie*, No. 48, 1887, the case of a man aged twenty-three, previously healthy, who was admitted to the hospital suffering from pyæmia. Beneath the lower jaw were three openings from which pus flowed. The percussion note over the anterior thorax was dulled; auscultation revealed the movement of imprisoned fluid. A median incision in the jugular fossa was made to the sternum, and the anterior mediastinum was washed out with a solution of salicylic acid, by an elastic catheter. Only partial relief followed this procedure, and finally resection of the manubrium and upper portion of the sternum was performed. Strict antiseptic and stimulant treatment was carried out, and the patient made a good recovery. The thoracic wall was sufficiently replaced by scar tissue to enable the patient to be about with comfort.

A PERFECT SOLUTION OF CHLORIDE OF ZINC.—The *Journal de Médecine* of November 27, 1887, gives the following formula for a stable solution of chloride of zinc:

Zinc. chlorid.	ʒ 10.
Aquæ destill.	♎ 2.
Acid. hydrochlor. pur.	♏ 45.

This will be found a clear and permanent solution for external use.

ŒSOPHAGOTOMY FOR THE EXTRACTION OF AN IMPACTED TOOTH-PLATE.—DR. WRIGHT reports, in *The Medical Chronicle* for December, 1887, the case of a woman, aged twenty-two, on whom he performed the following operation. The usual incision on the left side of the neck from the thyroid cartilage downward nearly to the sternum was made. The operation itself presented little difficulty. After division of the omohyoid and the deep fascia, the handle of the scalpel passed readily in separating the carotid sheath from the thyroid gland and exposing the gullet. A short-beaked sound passed down the œsophagus from the mouth made it very easy to open the tube, and the tooth-plate was then felt with the finger, lying well below the cricoid, but it was only after a good deal of manipulation and traction applied in various directions that the plate, which was exceedingly firmly fixed, could be extracted. It was disengaged at last, mainly by a forcible twisting movement in the long axis of the gullet. The œsophagus was closed with four or five catgut sutures, and the wound, after being well dusted with iodoform, was plugged with iodoform gauze. The gauze was removed on the following day, and a large drainage tube substituted for it. The patient was fed by enemata for a week, and then an œsophageal tube was passed, and she was fed for two days partly through this. So much pain, however, was caused by the tube that she was allowed to swallow her food in the ordinary way on the next day. No escape of fluid from the gullet ever took place through the wound, and convalescence was uninterrupted. The wound healed somewhat slowly, and it is only now—two weeks after the operation—that practically perfect swallowing power has returned.

The size of the tooth-plate is 1⅜ inches in length, 1¼ inches in breadth; it carries two incisor teeth, and has a sharp hook at one side by which it was kept in place. The other hook had broken off, and hence the plate became insecure.

VESICATION OF THE HEPATIC REGION FOR CROUP.—MOROT, of Vichy, believes and has practised the theory that puncture and vesication of the skin just beneath

the gall-bladder relaxes the spasm and dyspnœa of croup. He accounts for the effect by a diversion of the blood current from the larynx, and a slight abstraction of blood.—*Revue de Thérapeutique*, Dec. 1, 1887.

Koumissed Peptones.—Dr. Anderson, in the *British Medical Journal* of December 3, 1887, describes this substance which he has prepared, as follows:

It is milk, or milk and other foods; first, by the action of pepsin, of pancreatine, or of both, almost completely digested, and thereby converted into peptone, or still further split up, and then made into koumiss. In the process of peptonizing about twenty-five per cent. of water is driven off, and none is previously added. Koumissed peptones are, therefore, of about fifty per cent. greater food value than ordinary koumiss. They are more fluid, have a sediment of far greater impalpability, and are incomparably more digestible and easily assimilable than ordinary koumiss, or even than Russian fermented mare's milk. While the author of this paper claims to be independently a discoverer of ordinary koumiss, he is the acknowledged inventor and institutor of this, the highest expression of a perfect koumiss. It is of especial use in the most irritable and adynamic types of wasting diseases; and can be, and has been taken and retained, when all other foods, ordinary koumiss not excepted, have been rejected. Valuable lives have been saved which would have been lost but for its administration.

Hitherto I have spoken of the use of cane sugar in the making of koumiss, etc. I now come to speak of the substitution of honey. For years past seldom has cane sugar been used by me. In the preparation of ordinary foods, grape sugar, and sometimes sugar of milk, has replaced cane sugar on the ground of the disagreeable eructative and fermentative action the latter exerts when administered. This cannot be so great in the matter of koumiss; yet I have substituted honey for cane sugar, and principally for the following reasons: honey is more wholesome, more nourishing, more digestible, and more physiological food than cane sugar. It produces a koumiss having a finer sedimentary deposit, increases the beauty and delicacy of flavor, and delays or prevents its becoming caseous.

Koumissed peptones are, equally with koumiss, the vehicles for the administration of such of the most important therapeutic agencies as are of use in particularly wasting diseases. But such medicinal agents are not added where the beauty and delicacy of flavor of either the koumiss or koumissed peptones are in any appreciable degree interfered with.

The Strength of Tea.—Considering its universal use as a beverage, it is surprising how little is known about it, or any standard tests of its quality. The quality of tea generally spoken of under the term "strength" is very vaguely defined, and as yet no relation has been ascertained between it and the amount of any particular constituent of tea. Considering the physiological properties of theine, the characteristic and essential alkaloid of tea, it might be supposed that the "strength" of tea depended to a considerable extent upon the amount of this substance present in it, and this view assumes some probability in consequence of the variable statements that have been made as to the quantity of theine obtained from various kinds of tea, which estimates range from one to two to nearly six per cent. A recent investigation undertaken by Paul and Cownley, the results of which have been published in the *Pharmaceutical Journal*, has shown, however, that the variable yields previously obtained were probably due to imperfect methods of analysis, and that theine is a much more constant constituent of different kinds of tea than had been supposed. It was, in fact, found that in upward of twenty samples of Indian and Ceylon teas, commercially valued by the brokers at prices ranging from 7*d.* to 3*s.* per pound, the proportion of theine varied only from 3.22 per cent. in the lowest to 4.66 per cent. in the highest. In the case of two samples of tea selected by experienced judges as representing extreme differences in "strength," the proportion of theine was practically the same in both. It is evident, therefore, that neither the market value nor "strength" of a tea is dependent upon the quantity of theine it contains. Paul and Cownley consider that it is much more probable that the "strength" is chiefly determined by the amount and condition of the astringent constituent comparable to a tannin, but before pronouncing definitely upon this point, it will be necssary to acquire a better knowledge of the chemical nature of that constituent. The results of this investigation are of additional interest to the medical practitioner, because they furnish him with data concerning the approximate quantity of theine introduced into the system by habitual tea-drinkers. An ordinary modern teaspoon would contain about sixty grains of tea, and, according to the housewife's well-known rule, would be the quantity allotted to each person sharing in the tea-brewing. If the tea contained the average quantity of theine—say four per cent.—it would represent two and a half grains of theine. According to experiments made by Paul and Cownley, infusion in boiling water during five minutes, which does not exceed the time tea is usually allowed to "stand," is sufficient to remove at least half of the theine from the leaves, so that in a case such as that supposed each tea-drinker would ingest at least a grain of theine, or equal to a medicinal dose, as indicated by the *Pharmacopœia*. —*British Medical Journal*, December 3, 1887.

The Treatment of Blepharitis Following Measles.—Trousseau, in the *Journal de Médecine*, of November 27, 1887, employs compresses or fomentations of boric acid solution in the acute stage of blepharitis following measles. At night he orders the borders of the lids anointed with—

Vaselin.
Lanolin. . . . . āā gr. 75
Zinc. oxid. . . . . gr. 7½
Or,
Hydrarg. ox. rubr. . . . . gr. ¾

when the inflammation has become chronic.

Antifungin.—Under this title Oppermann has used borate of magnesia as an antiseptic, in a 15 per cent. solution, of which five to twenty drops internally may be given in typhoid fever and diphtheria. The powder is soluble in four parts of boiling water, and precipitates in cold water. It is decomposed by light.—*Monatshefte für Praktische Dermatologie*, No. 22, 1887.

THE TREATMENT OF LEPROSY.—UNNA is quoted by *The Medical Chronicle* for December, 1887, as advising the following treatment:

Chrysarobin	5 parts.
Ichthyol	5 parts.
Salicylic acid	2 parts.
Vaseline	100 parts.

which he applies to the nodules. On the face, neck, and hands, pyrogallic acid is substituted for the chrysarobin, in order to avoid the irritating effect of that drug, and avoid any danger of conjunctivitis. The nodules disappear or drop out, and the general condition improves.

SALOL IN TABLETS.—LOMBARD has found the following a convenient prescription:

R.—Gum. tragacanth.	gr. 15.
Gum. arabic.	gr. 45.
Aquæ	3ij.
Salol	3iss.
Sacchar.	3ij.
Essen. citron.	gtt. 5.

In 100 tablets, each containing between three and four grains of salol.—*Revue de Thérapeutique*, December 1, 1887.

PYRIDINE IN THE TREATMENT OF ASTHMA.—GERMAIN SÉE employs a teaspoonful of pyridine, put in a hot vessel or plate, by inhalation for twenty minutes, three times daily. He also prescribes iodide of potassium, with syrup of tolu and opium.—*Revue de Thérapeutique*, December 1, 1887.

ANTIPYRIN AS AN ANODYNE.—JENNINGS, in the *Lancet* of December 10, 1887, reports his experience with antipyrin as an anodyne as follows:

If antipyrin is not an unfailing specific, I have certainly seen it allay pain as speedily and more radically than a hypodermatic injection of morphia. Whether any evil results are likely to follow its prolonged use remains, of course, to be seen. There is a good deal of talk at present about the possibility of benzine poisoning resulting from the admixture of this substance with the drug, owing to imperfect preparation, but I must confess that every solution I have used hypodermatically has smelt of benzine, and until the end of September, when I purchased an inodorous sample in London, I was under the impression that this was always the case. Like others I have frequently seen giddiness, vertigo, and nausea follow the administration of antipyrin, and ecchymoses and induration at the seat of injection. In one instance where I had associated it with cocaine, according to a formula much used in Paris, the patient felt prostrate and miserable for four or five days. This had never occurred with antipyrin alone.

THE TREATMENT OF HEPATIC COLIC BY OLIVE OIL.—Olive oil in large quantity is vaunted as a certain cure for hepatic colic due to gall-stones. DR. JUST TOUATRE, of New Orleans, has written an interesting account of self-cure of biliary colic and gall-stones, in the second number of a bi-monthly Roumanian journal (*Archives Roumaines de Medecine et de Chirurgie*), whose editor is M. Georges Assaky. The method of procedure was as follows: At seven in the evening a blue pill of the weight of 2¼ grains was taken, and this was followed twelve hours later by the taking in one draught of twelve tablespoonfuls of olive oil; a quarter of an hour later a similar dose of olive oil was taken, and then the patient addressed himself to sleep on his right side. At nine o'clock the blue pill acted, producing a copious biliary evacuation, but no gall-stones. Three o'clock in the afternoon saw another bilious stool without stones, but from seven in the evening till midnight six stools were passed; the first two contained seventeen calculi of the size of a large pea of conical shape, grayish-yellow aspect, and soft consistence. Altogether sixty stones were evacuated, and six of these had the volume of an olive, and were of a black color. The passage of these calculi by the cystic and biliary canals was for the most part unattended with pain, a few spasms being felt probably at the time of the movement of the large calculi. An inexpressible relief was obtained from the pains over the liver and shoulder, which had previously caused much distress; the liver also diminished in size. For three months Dr. Touatre enjoyed perfect health, when the trouble commenced again; the olive oil was repeated in similar fashion, and with the result that eighteen more calculi were discharged by the bowel. Since then he has enjoyed excellent health. He admits that some courage is required to swallow the large doses of olive oil.—*Lancet*, December 10, 1887.

PASTEUR'S METHOD SIMPLIFIED.—DR. HÖGYES, of Buda-Pesth, has published in the *Orvosi Hetilap* an account of some researches he has made on the protection of dogs from rabies by a somewhat simpler method than that employed by Pasteur. He, too, makes use of the spinal cord of an infected rabbit, but instead of drying it to a gradually increasing extent to obtain various degrees of activity, he merely rubs it up with water containing chloride of sodium so as to make solutions varying in strength from 1-10th to 1-500th. The dog to be protected is injected successively with these, beginning with the weakest. The results appeared to be quite satisfactory, and a complete immunity from rabies to be secured by six of these injections.—*Lancet*, December 10, 1887.

A SIMPLE METHOD OF DISLODGING IMPACTED GALL-STONES.—LAWSON TAIT describes the following simple procedure, which he has used in one case successfully. It consists in passing a fine needle through the wall of the intestine from below (that is, from the empty part of the intestine) into the gall-stone. The stone is thus easily and immediately split up into fragments and passes readily along the intestine, and the grave complication of opening the intestine is rendered unnecessary. The operation is, in fact, little more than an exploratory incision.—*Lancet*, December 10, 1887.

LEMON JUICE IN EPISTAXIS.—GENUIL has had excellent results in checking epistaxis by first syringing out the nares with cold water and then following this by injecting the nares with lemon juice; the coagulation of the blood followed promptly.—*Bulletin Général de Thérapeutique*, November 30, 1887.

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RELATION OF DISEASES OF THE REPRODUCTIVE ORGANS IN WOMEN TO INSANITY.

It is hardly ten years since it was deemed important for the proper care of insane women in hospitals for the insane, that physicians who were women should have a place on the medical staff. No question as to their right to become applicants for such positions, or as to their legal qualifications, had arisen, but it was urged as an important consideration that from their inherent constitution they might exhibit more sympathy in the care of their afflicted sisters than might be expected from the so-called sterner sex; and that a woman could not give that assent to a personal examination that she may give in a sound mental state; and if she felt disposed to resist an examination, it was highly improper for any but a female physician to make it, if ever necessary, under these circumstances.

The departure was urged by some from an honest assumption and belief that a large proportion of insanity among women was due to those diseases and disorders that are peculiar to their sex. Non-professional persons, politicians, and others actuated by purely sentimental reasons, who profess to believe in equal rights, in the elevation of women to a higher plane, and that seeming disabilities should be removed, so that they might not be debarred from having a fair chance, also united in invoking legislation to make the appointment of female physicians in the asylums compulsory. In the absence of any legislation, such appointments were always considered within the scope of the appointing power; and, since the agitation of the question, female physicians have been appointed in several asylums without legislative requirement, for reasons considered good and sufficient. In the State of Pennsylvania, the women's wards of two hospitals have been in the sole charge of female physicians, and wherever they have been connected with an asylum service, no obstacle has been placed in the way of the study of the relation of diseases of women to insanity, so that we ought now to be in a fair way of arriving at some established results. From published reports and expressions of opinion thus far, and the absence of any expression on the subject where we might have looked for it, we cannot conclude that these diseases form such an important factor in the production of insanity as has been alleged. In a total population, where women form nearly an equal part, we might infer that if diseases of the sexual organs of women were a prolific cause of insanity, the number of insane women would greatly outnumber the insane males, whereas the reverse is true. As a matter of fact, if we trust to official reports, so-called women's diseases figure among the least of the agencies in the production of insanity. What is a frequent concomitant coincidence is too frequently mistaken for a cause. How far do these reports sustain this allegation?

According to the Report of the Committee of Lunacy of Pennsylvania for 1885, an even one thousand women were admitted to the various asylums of the State. In the published table of causes three of the thousand are reported to have become insane from uterine disorder and disease. In the Report for 1886, of 733 women admitted, the number reported is the same. Dr. Margaret A. Cleaves, Physician, Female Department, Harrisburg Hospital for Insane, in the 33d Annual Report, says: "My own actual experience convinces me that at least thirty per cent. of insane women are the subjects of lesions of the reproductive organs" . . . "The whole subject is one of much interest to me, but I cannot yet clearly discern the full extent of the influence that diseases of the reproductive organs have upon the insanity of women." In reference to treatment: "My experience does not justify me in the belief that the percentage of recoveries will be increased by such special treatment as I had hoped." Dr. Alice May Farnham,[1] with an idea of arriving at some conclusion in regard to the relative value of uterine disease as an etiological factor in the production of insanity, conceived the idea of comparing the result of the pelvic examination of a certain number of patients in the Willard Asylum with the same number of mentally healthy women of the same social class. "The result was somewhat surprising. Out of thirty mentally healthy women but four were found in whom the pelvic organs were in a condition of health. Out of the same number of insane

[1] Uterine Disease in the Production of Insanity. Alienist and Neurologist, Oct. 1887.

women, taken *seriatim* from the patients of two wards, six were found in whom the pelvic organs were in a condition of health. Were uterine disease really so powerful an agent in the production of insanity it would be a matter for wonder that, with the alarming prevalence of such disorders, so few women exhibit profound nervous disturbances."

The testimony of Dr. Skene, and others, in the same direction, could be adduced, but enough is cited to show that there is much professional as well as non-professional sentiment among physicians and the community at large on this subject that has no other foundation than conjecture. Disorders of the reproductive organs, like those of other organs with intimate relations to the nervous system, may have an influence in lowering the natural standard of health, but as an active, direct agent in the production of insanity they are greatly overestimated.

THE DANGER OF OCCUPYING NEWLY BUILT HOUSES.

THE town of Bâsle, in Switzerland, has adopted a regulation which prevents newly built houses from being inhabited until four months after their completion. It would be well if such a restriction were extended to other places. The reasons for the practice are obvious. The chief objection to the early use of newly built houses lies in the great danger to health of wet walls. The quantity of water used in constructing an ordinary house of brick and mortar would surprise any one who has not investigated the subject. According to Pettenkofer's estimate, the walls of a building in which 100,000 bricks are used, such as a modern brick dwelling of medium size, will require about 10,000 gallons of water in their construction, which must be gotten rid of before the house becomes habitable. This large quantity of water is held in the pores and spaces of the bricks and mortar, until dispelled in the form of vapor, which is a gradual process, unless its removal is hastened by artificial means.

Damp or wet walls are injurious to health by impeding ventilation and the diffusion of gases, through the closing of their pores by water. Spontaneous ventilation through the walls of a building plays no inconsiderable part in the change of air of our dwellings. Märker and Schultze found that the spontaneous ventilation through one square yard of free brick wall, at 9.50° Fahr. difference of temperature between the outside and inside, amounted to about eight cubic feet per hour.

Another way in which wet walls are injurious is by disturbing the heat-economy of our bodies. Damp walls absorb heat by their evaporation, and act like rooms insufficiently warmed; they are much better conductors of heat than dry walls, and add considerably to our heat-losses by a one-sided and increased radiation. It is not surprising that diseases commonly attributed to cold, such as rheumatism, catarrhal affections, and Bright's disease, are of frequent occurrence in damp dwellings.

In order to render new houses habitable, the excessive amount of moisture stored in the pores of the walls must first be removed. There is only one way in which this can be accomplished, and that is by spontaneous evaporation into and by the air. This evaporation depends on the temperature, humidity, and the velocity of the air. Under ordinary circumstances it is a gradual process, but a condition of dryness may be more quickly brought about by the heating of all the stoves, furnaces, and flues, and the continual ventilation of all the rooms of the house. In the absence of knowledge of proper measures having been taken to insure dryness, it is illusory to trust to appearances. The walls may have lost just enough of the building water to allow the air to occupy their superficial pores. They appear dry, while in fact they are not. When such a house is occupied, and the fires lighted, damp spots quickly appear upon the walls. The heat from the fire evaporates water from the surfaces in its vicinity, and this watery vapor, together with that given off from the bodies of the occupants and that produced by the manipulations of the household, such as cooking, washing, etc., is precipitated as dew upon the walls at a distance from the fire, for the reason that their pores are already surcharged with moisture, and cannot pass the water on through them to the outer air. A dry, porous wall, on the contrary, is capable of absorbing and transmitting a good deal of moisture without any evident signs of dampness.

A statement of these plain facts seems to be demanded, for it is a matter of everyday observation that people recklessly occupy houses almost before completion, without regard to their dryness or other conditions of fitness for habitation. The present time is one of great activity in building operations. In Philadelphia alone more than five thousand buildings were constructed in 1885, a larger number in 1886, and this number will be far exceeded the present year. The same activity prevails elsewhere. The eagerness with which new houses are sought after shows that the supply is not equal to the demand, and, in their haste to secure possession, people are apt to overlook features in construction and conditions of the buildings which may be most prejudicial to health.

DR. R. A. F. PENROSE, after an incumbency of a quarter of a century, has tendered his resignation of the Professorship of Obstetrics and the Diseases of Women and Children in the University of Pennsylvania, to take effect at the close of the current session.

The physicians of the two easternmost counties on Long Island, N. Y., have agreed to consolidate in one body, to be named the Queens and Suffolk County Medical Society. Dr. W. P. Overton, of Cold Spring, is President, and Dr. W. Thorne, of Farmingdale, is Secretary. There will be a meeting in March, 1888, at Farmingdale, and scarlet fever has been appointed as the scientific subject for discussion.

The preparation called "Rough on Rats" is nearly pure arsenious acid, and yet in many localities it is sold without restriction to every purchaser. No record of the sales of this form of poison is kept, and when it is used for criminal ends it is most difficult to trace it to its source. Suicide by this substance has occurred quite frequently in Brooklyn, of late, and Coroner Rooney has declared war upon its free and unregistered sale. It would be well if other coroners would unite with him in finding means to suppress the sale of this deadly nostrum.

The British Medical Association, at the instance of Mr. Ernest Hart, has started a medical library and reading room at the office of the Association, in London, for the use and convenience of the members generally.

The King's County Medical Society, at Brooklyn, N. Y., having become settled in their new home, recently purchased, now propose to float a monthly medical journal, the first issue of which will appear about the first of January next. It will probably be entitled *The Brooklyn Medical Journal.* It is, in some sense, the lineal descendant of the *Proceedings* of the society above named—a publication that subsided a few years ago, after an interesting existence of nearly a decade. Some of the old editorial talent will be enlisted for the new publication. Dr. Joseph H. Raymond will be editor-in-chief, and will be assisted by Drs. Hutchins, Hunt, Butler, and Bailey. At the outset, each issue will contain not less than one hundred pages, which will be open to the transactions of various local societies.

At the January meeting of the King's County Medical Association, Brooklyn, to be held on the 3d proximo, the subject for discussion will be "Fever," to be based upon Prof. Austin Flint's Address upon that subject, at the recent International Congress; papers by Drs. W. McCollum and T. M. Rochester, will review the therapeutic and physiological sides of the subject. Dr. Flint has signified his acceptance of an invitation to attend and will be invited to participate in the discussion.

Dr. Alonzo B. Palmer, Professor of the Practice of Medicine in, and Dean of the Medical Faculty of the University of Michigan, died at his home in Ann Arbor, last week, aged seventy-two. He was the author of a text-book on the *Science and Practice of Medicine*, which was published about five years ago, and of numerous contributions to periodical literature, and from 1852 to 1859 he was one of the editors of the *Peninsular Journal of Medicine.*

The English weeklies, just received, announce the death, last week, aged eighty-six, of Sir George Burrows, formerly Physician to the St. Bartholomew's Hospital, and Physician in Ordinary to the Queen.

REVIEWS.

A Manual of Organic Materia Medica. By John M. Maisch, Phar. D. Philadelphia: Lea Brothers & Co., 1887.

This little hand-book of Professor Maisch having reached its third edition, needs from us no words of recommendation, and our duty is the pleasant one of announcing the advent of the book revised up to date, and containing descriptions of those remedies which, as the author states it, are new, or else are old ones revived within the last few years.

The boon to the student who is forced to learn a large amount of that dry subject, materia medica, which this book affords, can only be appreciated by those for whom the book was chiefly written, namely, students of pharmacy; and while condensation of knowledge in a convenient form for "cramming" is, as rule, a faulty method of book-writing, in this instance it is not only justifiable but necessary, since a vast mass of unnecessary descriptive statements is weeded out.

Altogether, the third edition surpasses in its advantages and completeness its predecessors, and will doubtless reward both the writer for his thoroughness as to important details, and the publishers for their care in the printing and binding of the book.

CORRESPONDENCE.

BERLIN.

The Friedrichshain Hospital—Extirpation of Larynx—The Bacillus of Cancer.

To the Editor of The Medical News,

Sir: The physician who comes to Berlin thinking that the hospitals are open to him for bedside work and personal examination of the sick, is destined to be disappointed. There are hundreds of courses (in general medicine), where one can waste any amount of time, while a German student excludes *every* organ in the body before he makes a diagnosis of arterial insufficiency. But, bedside work, as a rule, is not to be had here. "The Berliner Krankenhaus, Friedrichshain," is the most extensive hospital here. It is built on the pavilion system, with no connection whatever between the buildings, of which there are fourteen; six medical and seven surgical, with a total of about seven hundred beds. The eleven resident physicians receive their appointment largely on account of their record in the University and elsewhere; and their term of service is as long or short as they choose to make it.

The surgical wards are under the direction of Fürbringer, formerly professor extraordinary at Jena. The distinguished position he occupies here needs no words from me—personally he is a charming man, and beloved by all about him. Prof. Fürbringer's latest publication is a monograph "Ueber die Desinfection der Hände des Arztes," a timely contribution to an important subject; it would well bear translation for American readers.

The surgical wards are under Hahn, who is considered by many to be a greater surgeon than Bergmann. And, indeed, the purpose of this letter is to describe his (Hahn's) last successful operation for extirpation of the larynx. This operation is at present much discussed here in connection with the case of the Crown Prince, about which one hears so much gossip and so little that is reliable. And the German physicians and surgeons, though differing, are at heart one in their sweeping condemnation of Morell Mackenzie. It is currently reported here that from the time he was called to the case, up to a few weeks ago, no German was allowed to examine the Prince's throat; and that this was not even permitted to Langraf, who accompanied his Highness to England, and remained with him until September 15th. Much comment has also arisen from Mackenzie calling Krause in consultation, as it is claimed that he does not represent Berlin medicine.

Again, Virchow now declares that he never said that the growth was *not* malignant; only that the *piece* sent him was not. However this may be, the growth is now said to be cancer, and medical Germany rejoices in the triumph of German diagnosis, and declares that the radical operation should have been performed at first, as was advised by Bergmann, Gerhardt, Tobold, etc. But then comes the question, "How far is this operation justifiable? Does it tend to prolong life?" I have before me Hahn's last two papers on the subject:

"Extirpation of the Larynx," and "The Results of Extirpation of the Larynx for Carcinoma," also the record of his 18 operations. The detailed record of those of Bergmann I could not get.

These figures are valuable, for they enable me to give a complete history of this operation till to-day. They are, moreover, entirely reliable; having been kindly given me by the distinguished professor himself.

There have been 103 partial and total laryngectomies done to date, with 21 recoveries. These figures, however, must not be taken as absolute; for in many we have no record beyond that of their supposed recovery at the time the case was reported.

We can obtain a fairer idea of the success of the operation in question by an examination of Hahn's record.

Professor Hahn has classified his operations as follows:

	No.	No. living
I. *Total* extirpation of larynx, on account of carcinoma and sarcoma	10	1
on account of stricture	2	2
II. *Partial* extirpation for cancer	4	3
for stricture	1	1
III. *Partial tracheal* extirpation on account of cancer	1	—
Total	18	7

Here, then, we have a total of 7 recoveries in 18 operations. In the partial operations the record is very good; for, as will be seen, we have here a record of 4 recoveries out of 5 operations. I had the pleasure of seeing the only surviving case of *total* extirpation. The patient is now seventy-five years of age, and was operated upon seven years ago. A very beautiful result; the old man having quite a respectable voice, and one can understand every word he says. Professor Hahn does not consider the operation a dangerous one, provided it is performed *early*, and the *cancer* shows no tendency to a *soft* variety.

In the Crown Prince's case, as is known, it was proposed to do a partial extirpation—and if we can judge anything by the above figures his chance of surviving was very great. The distress of the German people at his critical condition is very deep, for the Crown Prince is greatly beloved; and I am told that Bergmann had received three letters, from different men, begging that he should take their healthy larynx, if such a thing was possible, and transfer it to the Prince—for they would gladly die to save his life.

Two partial laryngectomies have been done here in the last month. One by Bergmann, upon a healthy man of about forty years, whose larynx had been involved for two months only, and who died a few days after the operation. The second was by Hahn, upon whose invitation I was present at the operation.

The patient was a fine looking fellow of thirty-six. The cancerous growth, of one and a half years standing, had destroyed the left vocal cord. He was operated upon exactly one month ago. He did well from the first, and is now rapidly recovering. I had the pleasure of seeing him a few days since, sitting up and able to swallow liquid food.

The operation was rapidly performed under perfect antisepsis—the only thing calling for special mention, is the use of a large tracheotomy tube,[1] wrapped with iodoform gauze; this is of a size which completely fills the lumen of the trachea, and absolutely prevents the entrance of blood into the lungs, besides enabling chloroform to be administered.

The other subject of general discussion here is, or was the announcement of the discovery of the *bacillus of cancer* by a young man, Scheurlen, an assistant of Leyden.

Scheurlen brought forward the results of his investigation on Monday last at the *Verein für Innere Medicin*. Of course, all medical Berlin was present, and the paper was listened to with great interest, which eventually gave place to greater disappointment. Scheurlen is only twenty-five, and graduated last spring from the University. The tremendous importance of this subject—a cancer bacillus—justifies a *résumé* of the latter's paper, the text of which comes to me this morning in the *Berliner klinische Wochenschrift*. Briefly: He took twenty carcinomas from various sources, and as a vehicle for pure cultures he first used the serum from a pleurisy. This was coagulated in sterilized tubes after Koch's method, and vaccinated with the "cancer milk" from the original cancers—and in three days occurred different changes indicative of the development of bacilli.

From each of ten tumors twenty vaccinations were

[1] An inferior tracheotomy was done.

made, and seven were successful. Microscopic examination of these showed a peculiar bacillus and spores, which, under sufficient power, showed movement. The bacilli colored with Gram's method, but only the ends. The spores colored with nitric acid and water only. He claims that no other bacilli and spores have the same form or movement, or color in the same way. The bacilli were found eight times out of ten when colored after Gram's method.

When cultivated from the serum in agar-agar, the bacilli appear in ten hours, the spores after ten days. A first coloring of these spores with fuchsin aniline, and afterward with violet or blue, makes a very striking picture.

In gelatine, the growth of the bacillus is very slow.

Direct cultivation from the tumors in agar-agar or gelatine, gave six results from seventy cultures. Two potatoes gave infusion of peptones. From cabbage, after twelve to twenty-four hours, he got the characteristic microbes.

The mammary glands of six dogs were injected with cultures from potato, or agar-agar. In four days there were circumscribed hardness and swelling of the glands. The tumor was removed from two of the dogs, and microscopic examination showed considerable cell proliferation, with large granular epithelioid cells, among which moving bacilli spores could be seen. Finally, he claimed to have discovered the cause—*i. e.*, the bacillus of cancer.

On this claim the criticisms have been very severe. But it is only fair to await his further investigations.

F. Donaldson, Jr.

Berlin, December 9, 1887.

NEWS ITEMS.

The New York Quarantine.—The State Board of Health of New York has forwarded to the Governor of the State a lengthy report on the New York Quarantine Station, which concludes as follows:

"It is the unanimous opinion of those posted on such matters that it would be difficult to imagine a worse state of affairs than now exists at the Quarantine station. It is hard to realize in this age of civilization that the harbor of the city of New York should be so inadequately provided with facilities for the prevention and extinction of an epidemic. The State Board of Health does not consider it within its province to pronounce upon the actions of the Quarantine authorities."

Refusal of a Physician to Treat Wealthy Patients in a Charity Hospital.—Dr. Norman Bridge, one of the attending physicians to Cook Co. Hospital, has been recently made the object of severe criticism by the *Chicago Tribune*, for refusing to treat as charity patients, persons able to pay, but admitted to the hospital under political favoritism.

Localization of an Imbedded Needle by a Magnet.—The *Chronique Industrielle* of November 6, 1887, is quoted by the *Sanitary Engineer* as relating the following incident:

The daughter of a Mr. Preece accidentally stuck a small steel needle into her hand which broke into three parts. Two of these parts were easily found and extracted, but the third could not be located. The Hughes' induction balance plainly indicated that the piece of needle was there, but not its position. Mr. Preece highly magnetized a fine needle and suspended it by a single fibre of silk. The deviations of the suspended needle always plainly indicated one particular spot when the sore hand approached it. After a number of trials with the same result, this point was marked, an incision made, and the third piece of the broken needle four millimetres long was found and easily extracted.

Hypnotism and the French Laws.—The *Lancet* reports that a schoolmaster has recently been charged, at the assizes of the Nièvre, with indecent assaults upon children under his care. At the previous sessions he had admitted the offence, but declared he had acted under the influence of an irresistible impulse. The court had in consequence postponed their decision pending the medical examination of the accused. The medical witnesses have concluded that the case is one of hysteria, and that hypnotic sensibility being developed to a high degree, the subject is only responsible to a limited extent; and an intelligent jury pronounced a verdict of acquittal. It would be interesting to know whether these enlightened experts would have come to the same conclusion had the assaults in question been made upon their own children, and what would then have been their views on hypnotism.

Lead Poisoning from Flour.—The *British Medical Journal* reports that a very remarkable epidemic of lead poisoning has recently been investigated in three communes in the north of France. Upward of one hundred persons were suddenly attacked with violent symptoms, among which severe colic predominated. So serious did the condition of some of the sufferers become, that medical aid was obtained, and the presence in several patients of a characteristic blue line on the gums gave rise to the suspicion of lead poisoning. The water supply was derived from so many different sources that it could not be incriminated, and suspicion ultimately fell on the flour.

It was ascertained on inquiry that the affected persons had all obtained their flour from the same mill, but those who had partaken of rye bread were most severely attacked. The mill was gone over, and after a very long and painstaking examination, attention was directed to the tin buckets of the elevator which served to transport the rye flour from the grindstones. Several of these buckets had a dull, leaden appearance, and were found to have been "tinned" with lead. As doubts were entertained whether the quantity of lead from this source was sufficient to give rise to such severe symptoms, they were carefully weighed, and were found to have lost upward of five ounces of their weight. The wheaten flour, which passed through another elevator, was free from lead, and this was evidently due to none of these "leaded" buckets having been employed in its construction. The accuracy of the discovery was confirmed by the observation that those who ate rye bread exclusively were most severely attacked, while the others, who mixed the two flours, escaped with comparatively slight symptoms.

A REVOLT OF VENEREAL PATIENTS IN AN ITALIAN HOSPITAL.—At the hospital of Santa Maria, at Naples, where a number of women suffering from specific diseases are under treatment, the authorities had forbidden the friends and paramours of the patients from calling upon them. This was followed by an open revolt for eight hours, during which the furniture of the hospital was demolished, windows and doors broken, and twenty-two of the Sisters of Charity in attendance were injured more or less severely. The patients attacked the police, and wounded several. Order was finally restored, and twenty-eight arrests were made. A reform in hospital management is evidently needed.

A PRACTICAL TEST OF A CLIMATE FOR A PHTHISICAL PATIENT.—DR. OTIS, of Boston, concludes in an article in the *Boston Medical and Surgical Journal* of December 15, 1887, that in whatever climate one finds his lung trouble improving steadily, there he should remain, not only until all signs of mischief disappear, but, in many cases at least, as long as he lives. I feel convinced that this is the safest and wisest plan, and I think that physicians of experience are gradually growing to this opinion. This is especially true of the Colorado climate, which is such a radical change from the one the patient is likely to come from. I believe the slow improvement, or lack of any improvement, in many cases is due, partly, at least, to the worry over the enforced exile, and eager watching for the time when they think they will be able to return to their homes. It is often noticeable how quickly and permanently those improve and recover who take up their residence in Colorado, and settle down to permanent living there, with their friends and family about them. The contrary is also observed with those who make it a mere health resort, and are separated from their family and friends; as, for instance, a wife from her husband, or a daughter from the rest of her family.

SEWER GAS POISONING IN A YOUNG WOMEN'S SCHOOL.—The *Sanitary News* of Dec. 10, 1887, reports a recent instance where a large and well-built and expensively built house, in a particularly exclusive and perfectly well-cared for thoroughfare of an eastern city, was taken as the home of a young ladies' school. Before its occupancy plumbers were set to work to tear out and renew wherever tearing-out and renewing were necessary to constitute perfect safety from sewer emanations. Even the stationary wash-bowls were removed from all the rooms, and bowls with pitchers substituted as a special precaution. At last the plumber—one of the largest, and wealthiest, and most reputable in the city—who had not been limited in any necessary expense, pronounced the plumbing-work in the house as good as it could be. The school moved in and for a considerable time all went well. After a while, one of the young ladies, and then another, then a third, was taken suddenly and mysteriously ill with violent headache, fever, vomitings, and other unmistakable typhoid symptoms. The school was at once closed, and a New York sanitary engineer of much more than local reputation, was commissioned to discover the cause. He found it in sewer-gas, escaping here and there about the building through leaky joints, ill-made connections, and criminal botch work of many descriptions, which, by the aid of plaster-of-Paris, or behind wood-work, or under floors, had been covered up and left to breed disease by the conscienceless plumbers. It is significant to note, notwithstanding all the defects found by the engineer on detail examination, that the well-known and so-called perfectly reliable peppermint test, which was first made by him, revealed no leaks whatever, except a scarcely perceptible odor in the bath-room.

THE CONTAGION OF DIPHTHERIA.—The *Sanitary News* of December 10, 1887, reports cases of diphtheria in Michigan, in which the health officer has traced the contagion which caused a severe attack of diphtheria in St. Joseph's Orphan Asylum, and has found that a mother and child had diphtheria in Sault Ste. Marie last spring. The mother died. The woollen dress which the child had worn was packed in her trunk and brought to Marquette. After being unpacked a short time ago diphtheria soon appeared.

DR. ARTHUR D. BEVAN, a member of the Faculty of the Medical Department of Wilamette University, Portland, Oregan, has been appointed to the Chair of Anatomy in Rush Medical College, Chicago.

WHAT IS A DRUG?—From the *Boston Medical and Surgical Journal* of December 8, 1887, we learn that a case came up in the Superior Criminal Court, December 6th, before Judge Bacon, on the interpretation of the Sunday law passed at the last session of the Legislature, as to the meaning of the word "drug," and what it includes. An apothecary was tried for a violation of the law. It appeared in the evidence that the violation consisted in selling a cigar. Counsel for the defendant claimed that a cigar was a drug, and came within the section of the law relating to drugs and medicines. In support of his view of the case, he cited various authorities, and quoted freely from Worcester and Webster as to the definition of tobacco. In his instructions to the jury, the judge said that if they found that tobacco was a drug or a medicine, then they must acquit; but if they found that it was not a drug, then the defendant would be guilty. The jury, after being out a short time, returned a verdict of not guilty.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM DECEMBER 20 TO DECEMBER 24, 1887.

BIART, VICTOR, *Captain and Assistant Surgeon.*—Relieved from further duty in the Department of Dakota.—*S. O. 293, A. G. O.*, December 17, 1887.

SWIFT, EUGENE L., *First Lieutenant and Assistant Surgeon.* Ordered for duty at Fort Spokane, Washington Territory.—*S. O. 293, A. G. O.*, December 17, 1887

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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